DOCUMENT RESUME

ED 102 289 CE 002 881

TITLE	Coal Mining Technology, An Innovative Program.
INSTITUTION	Wabash Valley Coll., Mt. Carmel, Ill.
SPONS AGENCY	Illinois Research and Development Coordinating Unit, Springfield.
PUB DATE	Jan 74
NOTE	191p.; Part of the section on program promotion was deleted because it will not reproduce in microfiche
EDRS PRICE	MF-$0.76 HC-$9.51 PLUS POSTAGE
DESCRIPTORS	Course Content; *Curriculum Development; Educational Finance; Educational Needs; Instructional Staff; Post Secondary Education; Program Costs; *Program Development; Program Evaluation; Program Planning; Resource Materials; Simulated Environment; *State Programs; *Technical Education; Technological Advancement; Technology
IDENTIFIERS	*Coal Mining; Illinois

ABSTRACT

Described in detail in this report are the processes and procedures involved in the development of a State funded curriculum and program for a new emerging technology, in this instance a Coal Mining Technology Program, to be taught at Wabash Valley College in Illinois. The document provides a step-by-step account of the determination of need, curriculum development, instructor recruitment and training, planning and development of a simulated mine, funding and procurement of equipment and materials, program promotion, and an evaluation of the program for training coal mine workers. Initial cost and the feasibility of providing initial program support are emphasized. Recommendations are discussed in terms of job training needs, the need for supplementary funding, the educational value of the program's resource materials, and the project's continuation, supplemented by followup studies. The 66-page appendix contains course briefs for nine courses, including objectives, course outlines, and materials needed, other course related materials, and a four-page bibliography. (BP)

ED102289

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COAL MINING TECHNOLOGY

AN INNOVATIVE PROGRAM

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Funded by:

State of Illinois
Division of Vocational-Technical Education
Research and Development Unit

RFP #C32-2

January 1, 1974

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Prepared by:

Herman E. Ahlfield
Project Director

Wabash Valley College
an
Illinois Eastern Junior College

CE 002 881

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INTRODUCTION

This activity was designed to look at special kinds of funding procedures that could possibly be established for school districts initiating new kinds of occupational programs and to look at what kinds of initial costs are incurred by a school district in establishing new programs. This paper will provide information in terms of initial cost and the feasibility of providing initial program support for new and emerging occupations on a permanent basis. This project included an in depth study of the processes and procedures for the development of a curriculum, program, and follow-up of a new and emerging technology. It provides a step by step account with the problems and pitfalls explained in detail. It illustrates the initial cost and the feasibility of providing initial program support for new and emerging occupations. Materials are complete to the extent that others may duplicate the process for program development.

In addition, course briefs are included for each course in the curriculum which includes objectives, course outlines, materials needed and a bibliography of other available materials.

The procedures followed were:

1. Collection of data on initial cost of starting an occupational program for a new and emerging occupation on a permanent basis.

2. Assemble data and determine significant outcomes of the project.

3. Have project evaluated by the Coal Mining Industry, the State Department of Mines and Minerals, and the Federal Bureau of Mines to determine if the above are satisfied with the services offered by our educational institution.

4. Make Recommendations for future developments.

This research project was written in response to R.F.P. #C10-2 from the State of Illinois, Division of Vocational-Technical Education, the details of which follows:

REQUEST FOR PROPOSAL

Issued by:	Research and Development Unit Division of Vocational and Technical Education State of Illinois 1035 Outer Park Drive Springfield, Illinois 62706 Telephone: Area Code (217) 525-4620
Issued to:	Research and educational agencies--public and private, and other agencies or parties interested in developing proposals.
Activity Requested:	Pilot Programs for New and Emerging Technologies (RFP #C10-2)
Estimated DVTE Resources:	$60,000.00
Time Frame:	September 28, 1972 through June 30, 1973
Geographic Limitation:	No Limitation
Activity Goal:	This activity will be designed to look at special kinds of funding procedures that could possibly be established for school districts initiating new kinds of occupational programs and to look at what kinds of typical costs are incurred by a school district in establishing new programs.

Objectives:

1. To provide technical support for selected institutions (secondary, area center, and post-secondary) that have indicated an intention to develop ways to share, pay, and determine the feasibility of establishing permanent cooperative agreements between educational agencies and industries regarding shared systems.

2. To study the feasibility of providing hiring program support for new and emerging occupations on a permanent basis.

3. To evaluate the pilot cooperative activities by determining:

   a. If the behaviors in participating with the services offered by the educational institutions.

   b. If systemic initial costs are required by an educational institution when maintenance was completed.

   c. If systematic funding is necessary for initial development of new programs.

Procedures for Implementation:

In order for an institution to qualify for the pilot SPS, it must be able to substantiate need based on:

   a. Industry interest demonstrated by initial request for program.

   b. Manpower need must be substantiated.

   c. Programs can not be currently available in other institutions that an emergency.

   d. Must have procedure for determining all initial cost over and above regular educational reimbursement.

Note: The first programs will be selected at the secondary, area center, and post-secondary levels for a cost of $10,000 each.

End Results:

This project will provide information in terms of initial cost and the feasibility of providing initial program support for new and emerging occupations on a permanent basis.

[illegible] [illegible] [illegible] [

OBJECTIVES OF ILLINOIS EASTERN JUNIOR COLLEGES

1. To provide programs for students broadly defines as follows:

   a. Liberal arts and sciences, general education and pre-professional.

   b. Occupation oriented for entry level competence in an occupation.

   c. Prepare some students for entry level as occupational technicians.

   d. Adult and continuing education.

   e. General studies.

2. Provide guidance with the discovery and development of abilities and talents of individual students, including especially those uncertain as to future education plans.

3. To serve as a cultural, intellectual, and resource center for the area.

4. To adapt to present curricula and programs to meet the ever changing needs of the district served, and to develop new curricula and programs, through continuous research within the limitations of available resources.

OBJECTIVES IN MEASURABLE TERMS

1. Vocational and technical training to meet the needs of persons who wish to improve their skills, prepare themselves for advancement or change of employment or expand their general education in these fields.

2. To prepare students for gainful employment in the occupations for which they are being trained at an entry level of competency.

3. To prepare students for gainful employment in the occupation for which they are being trained at a technician level of competency.

4. To provide opportunities for employed persons to increase their job competence.

5. To develop safety work habits, improve work habits and attitudes.

6. To promote the economic well-being of the community through services to the public, business, industry, and labor.

7. To provide students with the opportunity to explore their interests and abilities.

8. To aid students in attaining a better understanding of the world in which they live.

9. To help students develop desirable social attitudes and abilities.

10. To cultivate proper habits of health and living.

11. To assist all students to become active, responsible citizens in our democratic society.

12. To aid students in attaining a better understanding of occupational opportunites through extensive counseling and guidance.

13. To provide counseling services to assist students in choosing and following educational programs most profitable to them.

14. To ccoperate with the professions, business, and industry in the area of establishing internship programs in which students can gain practical experience.

A broad comprehensive education program is required to achieve these objectives. This must be a vital, flexible program that can be adapted to the changing needs of our society. In order to meet these requirements, the present and proposed occupational education programs are an integrated part of the junior college curricula and the facilities for these programs are designed to flexibly serve a whole family of occupations.

The coal industry in this area is very large and expanding. The need for better trained and safer coal miners is obvious. Since there is a manpower need for trained employees, since there are untrained and unemployed persons in Southern Illinois,

and since our charge as a community college includes vocational training it seems obvious that these needs be alleviated through training.

In 1972 the needs have not been met and many new ones have now arisen and are standing, once again, as a threat to the production of the coal industry.

A few years ago the needs were being felt in the strip mine phase of the industry. These needs are no longer as demanding as they once were. The reason is that as time goes by, the surface coal is fast being stripped out, and because of a tough program for returning land to productive use, coupled with the environmental control laws, the industry is now largely concerned with underground mining.

The coal industry is now the largest industry in this area of Illinois. The yearly production is great now, with a forecast of an increase of several thousand tons by 1972.

The opening of new mines in this area, along with several billion tons of unmined coal, gives a bright outlook for the industry. The only dark spot facing the industry in the near future is the lack of trained personnel.

Modernization of the coal industry over the last 25 or 30 years has made is necessary to have trained and skilled people to place in the various mines of the area. The age of the average coal miner is such that in just a few short years there will be an alarming shortage in this field. The younger, unskilled workers are not getting the chance to be employed and work their way up on the job. These two facts in themselves are enough to cause alarm in this industry.

It seemed ironic that on the one hand there are large numbers of unemployed, unskilled persons who must be trained for service in the mining industry, yet we, the general public, have not been concerned enough to set up training programs to help our largest industry in this area.

At the present time, there is not a training facility in Illinois which will train a person to be a mine mechanic, mine electrician, a hydraulic specialist, haulage maintenance man or other fields that this mining program would cover.

New mines have opened and have therefore thrown a great demand for trained or experienced personnel upon the industry.

It can be shown at the present time that none of the training in the preparatory phase of our schools is directed toward the coal industry. This is not saying that training of any kind is not offered. There is a continuous training program for Mine Examiner and Mine Manager in the Department of Mines and Minerals, but this program is designed to help men presently employed. This in itself is good, but does not justify the absence of training for new mining personnel.

The coal industry itself has requested training programs to be conducted through the Wabash Valley College. This should show us that the coal industry is interested in and willing to work with vocational education, and is a cause within itself that could be used to justify a training program.

DEVELOPMENT OF TRAINING PROGRAM

It was then the decision of Wabash Valley College to proceed with all haste in the development of a program to meet the needs as related to us by industry and by the State of Illinois, Department of Mines and Minerals. With the able assistance of a temporary steering committee composed of: Mr. Kenneth Wells, United Mine Workers of America; Mr. Clem Davides, U.S. Department of the Interior, Bureau of Mines; Mr. Charles Harrison, AMAX Coal Company; Mr. Harold Odle, Illinois Department of Mines and Minerals; Dr. John Cox, President, Wabash Valley College; and Mr. Herman Canfield, Dean of Instruction, Wabash Valley College, we developed and proposed a formalized one year pilot project with the following objectives:

1. Upgrade and improve training of the safety phases of underground miners with the ultimate goal of reducing accidents mostly caused by inadequate training and instructions.

2. Improve the productivity of underground miners as one means of meeting the ever increasing energy demands. (It is almost impossible to meet health and safety requirements and production goals with the large number of untrained, inexperience new hires now being introduced to the underground mines.)

3. Alleviate the current shortage of underground miners who need to be trained in health and safety practices as well as production methods by formal classes of instruction conducted by competent instructors.

4. Provide a semi-permanent vehicle for teaching fundamental, safe coal mining habits and practices relating to mine ventilation, roof control, and safe machine maintenance and operation.

5. Since the Southern Illinois coal field is one of the most rapidly expanding ones in our country, some means must be found to improve the accident frequency ratios and the production of coal.

CURRICULUM DEVELOPMENT

The curriculum development for this new and innovative program had to follow all the procedures of good curriculum development and in addition, a few extra steps were necessary. The extra steps for the Coal Mining Technology Program included the visitation of mines and their differing requirements since no training program existed in the state of Illinois. In fact, I could not locate another junior college in the United States which offered accredited, college credit courses for the training of coal miners.

The following information has been prepared concerning the proposed program in Coal Mining Technology. Information presented concerns national, state, and local manpower requirements. It was compiled with the assistance of a steering committee composed of Mr. Harold Sidle, Safety Training Coordinator for the state of Illinois, Department of Mines and Minerals; Mr. Charles Harrison, Supervisor-Training, AMAX Coal Company; Mr. Kenneth Wells, President-District 12, United Mine Workers of America; Mr. Clen Davidas, U.S. Department of the Interior, Bureau of Mines; Dr. John Cox, President, Wabash Valley College; and Mr. Norman Ashfield, Dean of Instruction, Wabash Valley College.

Physical Requirements

Strength (lift, carry, push, pull) - Very heavy, over 100 lbs.; medium lift, frequent lift/carry - over 50 lbs. Other characteristics: climb, balance, stoop, kneel, crouch, crawl, reach, handle, finger and feel.

Working Conditions

Inside (50 or more); noise, vibration, hazards, fumes, odors, toxic conditions, dust, poor ventilation.

Training Time

Specific Vocational Preparation: 6 months to 1 year

General Education Development:

(Reasoning Development) - Apply principles of rational systems to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form.

(Mathematical Development) - Perform ordinary arithmetic, algebraic, and geometric procedures in standard, practical application.

(Language Development) - Extrapolation and expression of a level to interpret technical manuals as well as drawings and specifications such as layouts, blue prints, and schematics.

Applicant Quality & Quantity

It should be emphasized that the available labor pool for drawing a quantity of persons is adequate. The application of a 5% unemployment figure would result in well beyond 1,000 persons

available for training. This figure does not include other types of persons who are a source of potential trainees. The labor pool could be categorized as approximately three groups of persons as follows:

1. Those presently employed and desiring to change occupations.
2. Those presently unemployed and desiring employment.
3. High school students selecting an occupation.

Employment Turnover

It is estimated that the employment turnover resulting from new hires, retirements, replacements, and separations would result in approximately 5,100 per year. This figure is earlier used the 10% employment figure is reached. It is then estimated that the projected turnover will approximate 10%. The estimated age of those employed would be 18 years. The maximum age would be 65 years. The estimated average age of employees would be 30-40 years of age.

Physical Requirements

The employee must pass a medical examination which shows no lung disease or health problems related to lungs and no hearing loss. These physical requirements are not only the result of company policy, but state law.

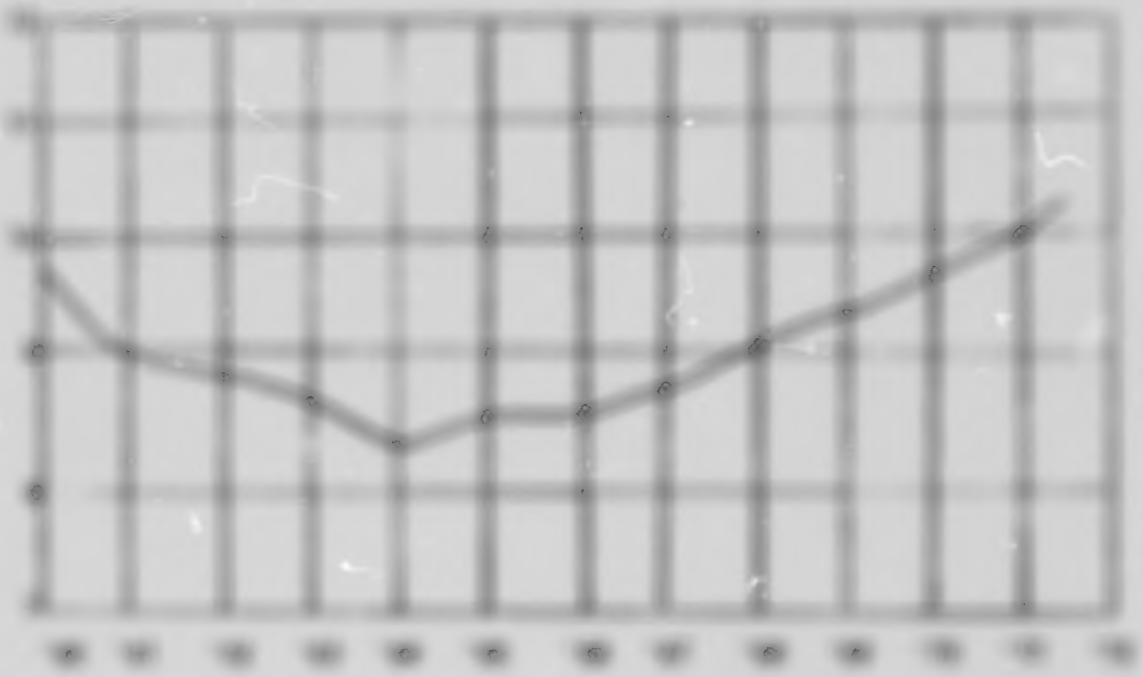
Hazardous Conditions

It is reported that in the state of Illinois between 11 and 12 fatalities occur per year. This is in a labor force of approximately 11,000 persons. The actual fatalities are then one-tenth of one percent.

[illegible] Unemployment Trends

The unemployment trends for the state of [illegible] declined moderately from 1990 to 1995, as the following charts illustrate. There is slight rise and leveling off period presented while employment trends beginning the same for girls began to decline in the 80's. The same trend is expected to occur in the 1990's.

[illegible] Unemployment (1990's)



[illegible] Wages Trends of [illegible]

The average hourly wage for retail workers in 1990 was $5.00. It rose to $5.37 an hour by 1995. The average weekly wage for 1990 was $180.00 which rose to $193.32 by 1995.

[illegible]

[illegible]

[illegible]

Specific Objectives

1. To train young men in the various phases of the mining industry in order that they may have the necessities of life and contribute to the betterment of their respective communities.
2. To have set times, and established courses of study whereby this may be accomplished by the best possible means, and each teacher or administrator to give unselfishly of his time in order to help each individual achieve the set goals.
3. To determine if the existing program being offered is operated in a sufficient manner that will help the student as well as all of the people of the region, by working with all advisory groups and the mining industry.
4. To serve people according to their needs and age levels, in order that they may be trained, retrained or brought up to date in their work area.
5. To promote professional training courses in order to have the best staff and teachers that is possible in vocational education.
6. To promote group relationships among students and teach them to have respect for the rights and property of others.
7. To contribute to the development of the individual's knowledge in the selection, use, and care of the various instruments and equipment used in the mining industry.
8. To develop attitudes that will make them better students and better citizens of the community and nation.
9. To project into the future and determine the needs beforehand in order to plan wisely for them, and thereby always have a sound planning device for the area mining industry.

Having developed objectives for the program, it was then necessary to proceed as rapidly as possible to develop the curriculum. In the development of the curriculum we were constantly aware that neither mine operators, nor their employees have ever had the benefit of a properly oriented, formal and organized means of teaching safe, proper underground mining techniques. Such training has been on-the-job by those who were never taught teaching techniques.

The ever increasing demand for energy in the form of coal demands better safety and mining practices in order to cope with the latest and most advanced kinds of mining machinery now being used in Southern Illinois coal fields.

After a thorough evaluation of the essential steps for the beginning of classes on August 30, 1973, two definite dates which had to be adhered to in order to have the program approved and in operation were determined. The deadline for having programs submitted to the Illinois Junior College Board to begin during the Fall Quarter was March 1, 1972. Since classes start on August 30, it appeared to be an almost impossible task. It meant that the curriculum had to be developed within a matter of days, and that it had to receive approval at the first reading of each committee. The following curriculum was presented to all in-district committees and received a unanimous approval.

ILLINOIS EASTERN JUNIOR COLLEGES
District 529
WABASH VALLEY COLLEGE

PROPOSAL FOR OCCUPATIONAL PROGRAM IN

COAL MINING TECHNOLOGY

1 YEAR CERTIFICATE PROGRAM

DATES PRESENTED TO:
Gen'l Vo-Tech Adv. 1/17/72
WVC Curriculum 1/11/72
District Adm. Council 1/25/72
Citizen's Adv. 2/9/72
Board of Trustees 2/15/72

		CONTACT HOURS PER WEEK		
		CLASS	LABORATORY	CREDIT HOURS
FIRST QUARTER				
CMT 112	Introduction to Coal Mining	4	0	4
CMT 122	Mining Law	4	0	4
CMS 112	First Aid & Mine Rescue	4	0	4
MTH 112	Applied Mathematics	4	0	4
ORT 111	Freshman Orientation	1	0	1
	TOTAL HOURS FOR FIRST QUARTER	17	0	17
SECOND QUARTER				
CMS 122	Coal Mine Atmosphere	4	0	4
DLR 132	Basic Welding	2	4	4
CMT 132	Lamp & Detection Instruments	4	0	4
CMS 132	Accident Prevention & Safety	4	0	4
	TOTAL HOURS FOR SECOND QUARTER	14	4	16
THIRD QUARTER				
CMT 142	Mining Equipment	4	0	4
CMS 142	Coal Mine Ventilation	4	0	4
CMT 152	Roof & Rib Control	4	0	4
CMT 162	Problems of Operating Underground Mines	4	0	4
	TOTAL HOURS FOR THIRD QUARTER	16	0	16
	TOTAL HOURS FOR PROGRAM	47	4	49

COAL MINING TECHNOLOGY COURSE DESCRIPTIONS

CMT 112 INTRODUCTION TO COAL MINING 4-0-4

An introduction to the fundamental concepts of coal mining. Geological factors affecting coal from the origin of the earth. How coal was formed and coal resources of the United States. The choices and methods of mining coal. Four classroom hours per week. 4 quarter hours credit.

CMT 122 MINING LAW 4-0-4

An introduction to the coal mining laws of the federal government and state government. This course deals with regulations relating to mining practices. The Mining Act of Illinois covering the installation, operation and safety in bituminous coal mining and also the Federal Mine Safety Code. Four classroom hours per week. 4 quarter hours credit.

CMS 112 FIRST-AID & MINE RESCUE 4-0-4

Training by instruction and demonstration, information is disseminated regarding safe and unsafe practices, with a view to reducing accidents as well as teaching the correct emergency aid for injured persons. The additional purpose of this course is to familiarize the student with the principles of mine rescue operations and the actions to be taken by men underground in case of a mine disaster. Four classroom hours per week. 4 quarter hours credit.

MTH 112 APPLIED MATHEMATICS 4-0-4

This course is designed primarily for the vocational-technical student. The course material emphasizes the fundamental operations with whole numbers, fractions and decimals, and studies the applications of those operations to areas related to specific vocational programs. PREREQUISITE: MTH 010 or its equivalent. Four classroom hours per week. 4 quarter hours credit.

ORT 111 FRESHMAN ORIENTATION 1-0-1

Designed to give incoming freshmen an introduction to college life. One classroom hour per week. 1 quarter hour credit.

CMS 122 COAL MINE ATMOSPHERE 4-0-4

A study or analysis of mine air. Mine air as it relates to health and safety of the men. The gases commonly encountered in coal mines and the properties of them. The fundamental physical laws pertaining to air and atomspheric pressure. The effect of temperature and pressure on gases within a mine. Four classroom hours per week. 4 quarter hours credit.

DLR 132 BASIC WELDING 2-4-4

This is a practical course in the use of oxy-acetylene and electric arc welding equipment. Students will practice cutting, bronze welding, fusion welding, and hard-facing with the oxy-acetylene flame. They will also practice selection of electrodes, running beads, and welding common joints in all positions. Familiarization with semi-automatic inert gas processes will be provided. Two classroom hours per week. Four lab hours per week. 4 quarter hours credit.

CMT 132 LAMP & DETECTION INSTRUMENTS 4-0-4

The purpose of this course is to instruct in the proper use and care of the permissible flame safety lamp and the various permissible methane detectors. The ability to determine methane concentrations using these instruments and the ability to properly maintain them. To train persons to test mine atmospheres with the various instruments and gauges. Four classroom hours per week. 4 quarter hours credit.

CMS 132 ACCIDENT PREVENTION & SAFETY 4-0-4

Because the injury and fatality rates of coal mines are consistently worse than those of most other industries the need for safety education is a prerequisite to safety in coal mines. Of all causes of accidents, the most numerous and baffling are those due to human behavior and personality. Four classroom hours per week. 4 quarter hours credit.

CMT 142 MINING EQUIPMENT 4-0-4

Practices and devices involved in the extraction and transportation of coal. The [illegible] of equipment used in drainage and roof support. The use of electric, hydraulic and compressed air power in coal mines. Coal preparation equipment and machinery. Timbering and pinning equipment. Four classroom hours per week. 4 quarter hours credit.

CMS 142 COAL MINE VENTILATION 3-0-3

The goal of this course is to help the student understand mine ventilation control devices from the main fan to the working face. Four classroom hours per week. 3 quarter hours credit.

CMT 152 ROOF AND RIB CONTROL 4-0-4

The purpose of this course is to develop a total awareness to the dangers of falls of roof, face and ribs for related mining personnel and to acquaint them with methods for preventing injuries and fatalities resulting from such danger. Four classroom hours per week. 4 quarter hours credit.

MNT 142 PROBLEMS OF OPERATING UNDERGROUND MINES 4-0-4

A total picture of the problems of management in the operating of a coal mine. Union, management relations, grievances and contract disputes. Also the responsibilities and duties of management. Four classroom hours per week. 4 quarter hours credit.

After the basic curriculum was developed, it was then necessary for more detailed and specific information to be compiled and or developed for the introduction of classes. The following information is included in detail in the appendix:

1. Course briefs and material outlines for each course.
2. Listing of audio-visual materials which have been compiled at Wabash Valley College.
3. IJCB Form 7 which requests pursuing the program development.
4. IJCB Form 9 and attachments which request formal approval from the Illinois Junior College Board for the curriculum in the final stages of development.

Instructor Selection and Training

Instructor training for the Coal Mining Technology Program differs many problems which are not present in most training programs. For instance, in many of the college transfer areas there is a surplus of trained instructors. Since there are currently no instructor training programs as well as no coal mining technology programs in the state of Illinois, instructors must of necessity come from other sources. The possibilities that were available to us at Kaskaskia College for mining instructors for Coal Mining Technology were:

1. Mining instructors from the Federal Bureau of Mines
2. Mining instructors from the state of Illinois, Department of Mines and Minerals
3. Mining instructors from related areas and training them about coal mining
4. Mining coal miners and training them in instructional methods
5. Practicing engineers in the coal mining industry who also has training in educational methods and procedures.

Many of the above listed alternatives would create problems for an educational institution that has instructors hired in other instructional areas. For instance, smooth talking college instructors are placed on a salary schedule which is determined by education, years of instructional experience, and years of industrial experience. The salary schedule is not sufficient

to acquire by physical manipulation from the coal mining industry or by written instructions from the National Bureau of Mines or the state of Illinois Department of Mines and Minerals. This primarily leaves only two alternatives, one, training persons who are already technicians in related areas about coal mining, and two, training coal miners to technicians' skillsets.

The decision was made to attempt to convert Mr. Joe Butterick, who was on our present staff in the area of instrumentation and technician, to a coal mining technician. Mr. Butterick was very interested in the Coal Mining Technology Program, and felt that it would be a great challenge as well as a great opportunity to learn a new field yet work in the related areas of which he already had some knowledge. This decision was made after having several of the activities faculty members take field trips through mines, watching films about coal mining, having discussions with personnel from the mining industry, the National Bureau of Mines, the state of Illinois Department of Mines and Minerals, and the United Mine Workers of America. In addition to having Mr. Butterick involved as an instructor for the Coal Mining Technology Program, it was decided that there were other areas of expertise which others of the activities staff at Kaskaskia College could supply. Robert Miller, College currently offered a two-year program in Electronics Technology. Both Mr. Knapstein and Mr. Chambers have considerable experience in industry relating to electrical controls. It was decided that they would be prime prospects for learning the electrical portions related to the coal mining

[illegible] [illegible] [illegible] [

OCTOBER 5 & 6, 1972
FIELD TRIP: ILLINOIS MINING INSTITUTE
SPRINGFIELD, ILLINOIS

The Illinois Mining Institute meeting proved to be of great educational value to the Coal Mining Technology students by allowing them to learn from industry leaders what was actually happening in the coal mining industry. It also gave the students an opportunity to meet and talk with many of the people involved in coal mining operations. During the meeting, they listened to presentations from many different speakers including representatives from industry, the Federal Bureau of Mines, etc. This meeting held special importance to the students of Wabash Valley College since a major portion of the program was a presentation entitled "Education for Industry" presented by Herman Ahlfield, Dean of Instruction at Wabash Valley College. This presentation outlined the development of the Coal Mining Technology Program at Wabash Valley College. Dean Ahlfield introduced the students and Mr. Harold Odle for special recognition.

OCTOBER 17 & 18, 1972
GUEST SPEAKER: MR. ANDY COPP
FEDERAL BUREAU OF MINES

Mr. Copp, from the Federal Bureau of Mines, spoke to the class on Federal Law. At the completion of his presentation, the students were eligible to receive their Federal Law Certification.

OCTOBER 24, 1972
GUEST SPEAKER: BILL BRENT
MC NALLY PILLSBURY MANUFACTURING COMPANY

Mr. Brent gave a presentation to the class on the methods and machines used in the preparation of coal. He explained all the different processes used by McNally-Pittsburg in preparing coal for the consumer.

NOVEMBER 6, 1972
GUEST SPEAKER: MR. TED PLUMLEE

During the month of November, Mr. Ted Plumlee visited the Coal Mining Technology class as a guest lecturer.

NOVEMBER 9, 1972
FIELD TRIP: BENTON MINE RESCUE STATION
MAT INDUSTRIES

At the Benton Mine Rescue Station students had an opportunity to observe the chemist making the different types of tests that are made on mine air samples after they are taken in the mine. The students had an opportunity to wear a mine rescue self breathing apparatus for about 15 minutes. In this way, the students were able to learn first hand what the self-breathing apparatus is, how it operates, some of the problems involved, and the different operations that are involved in mine rescue work. While at MAT industries, we were given an excellent tour of their facilities, and observed the rebuilding of mining equipment with machines in all phases of rebuilding. They are completely stripped down and then rebuilt, piece by piece, until they are completely refinished. This field trip gave the students a good insight into the operations involved in repairing these types of machines. Later in the afternoon, we visited Budman Hydraulics, located in West Frankfort, Illinois.

DECEMBER 18, 1972
FIELD TRIP: VALLEY STEEL MANUFACTURING PLANT
FLORA, ILLINOIS

While touring this plant, the students were able to watch the complete operations involved in the manufacture of roof bolts used in coal mines. This included the incoming steel and rods which are manufactured into roof bolts, the flat steel which

is made into plates, and the expanders which are put on the end of the roof bolts. By learning what was involved in the manufacturing of these roof bolts, the students were able to gain some knowledge of what to expect when they are actually working in a mine, and using these roof bolts for their protection and safety.

JANUARY 9, 1973
GUEST SPEAKER: MR. DON SIMPSON
ILLINOIS DEPARTMENT OF MINES AND MINERALS

Mr. Simpson's presentation to the Coal Mining Technology class concerned explosives used in the mining industry. To help the students become familiar with the equipment and explosives, he brought along samples, and demonstrated the various types of explosives, caps, detonators, cords, etc., that are used in coal mining.

JANUARY 16 AND 17, 1973
FIELD TRIP: SAHARA #21 MINE
HARRISBURG, ILLINOIS

The students were taken underground in two shifts to watch a conventional mining unit in operation. They saw the cutting, drilling, blasting of coal with the use of compressed air, and the ventilation used with the room entry type of mining. Later in the day, they viewed the operation of a continuous miner in another section of the same mine. The students gained a good understanding of what the continuous miner is, how it operates, and the associated equipment used with the continuous miner in the room and entry type of mining.

JANUARY 18, 1973
GUEST SPEAKERS: MR. G.B. WILEY, MR. RON MORRIS, MR. DWANE MCCLUSKY
SAHARA COAL COMPANY

These gentlemen answered any questions the students had concerning the field trip they had taken the previous two days to the Sahara #21 mine in Harrisburg, Illinois.

JANUARY 23, 1973
GUEST SPEAKER: MR. RALPH BEERBOWER, PRESIDENT
AMAX COAL COMPANY

The Coal Mining Technology students were invited to attend the Chamber of Commerce meeting at the American Legion Hall in Mt. Carmel, Illinois. Mr. Beerbower was guest speaker for the evening.

JANUARY 29, 1973
GUEST SPEAKER: MR. SAM BEARD, SUPERINTENDENT
WABASH MINE

Mr. Beard visited the class, and gave his views on the operation of the mine at Keensburg and the stage of development which the coal mine was in at that time.

JANUARY 31, 1973
GUEST SPEAKER: MR. HAROLD ODLE
ILLINOIS DEPARTMENT OF MINES AND MINERALS

Mr. Odle spoke to the class concerning the coal reserves in the state of Illinois.

FEBRUARY 6, 1973
GUEST SPEAKER: MR. GARY SHAW, INSTRUCTOR
WABASH VALLEY COLLEGE

Mr. Shaw worked with the students on the preparation and usage of resumes.

FEBRUARY 13, 1973
GUEST SPEAKER: MR. GARY SHAW, INSTRUCTOR
WABASH VALLEY COLLEGE

Mr. Shaw again met with the class to answer any questions they had on writing their resumes. He emphasized the importance of a profit attitude on the job.

FEBRUARY 17, 1973
FIELD TRIP: AMAX COAL MINE
KEENSBURG, ILLINOIS

On this trip, the class went down the slope of the mine to the working area, and went through the silos which were being built. Both were nearing completion. They also toured the coal the coal preparation plant at the mine site.

FEBRUARY 21, 1973
STUDENT INTERVIEWS: MR. LARRY MORTIN
AMAX COAL COMPANY

Mr. Martin was on campus, and interviewed several of our students for possible electrical jobs with AMAX Coal Company. Mr. Harold Odle also visited on February 21, giving a presentation to the class.

MARCH 21, 1973
STUDENT INTERVIEWS: MR. ROD LINDER AND MR. GARY SHAW
INSTRUCTORS, WABASH VALLEY COLLEGE

Mr. Shaw and Mr. Linder served as employers, and conducted mock interviews with the students. The students were applying for jobs as coal miners at a particular coal mine (Inland Steel Company). The importance of job readiness or the lack of it and the profit attitude were stressed.

MARCH 22, 1973
GUEST SPEAKERS: MR. RICK WILLIAMS AND MR. LEONARD KNOWLES
COUNTRY COMPANIES INSURANCE COMPANY

Mr. Williams and Mr. Knowles spoke to the class on the subject of life and health insurance. The students were able to ask questions concerning the effect their employment as coal miners would have on their ability to obtain insurance.

MARCH 28, 1973
GUEST SPEAKER: MR. CHUCK HARRISON
AMAX COAL COMPANY

Mr. Harrison spoke to the class about the operation of a coal mine, and the stage of progress of the Wabash Mine.

MARCH 28, 1973
STUDENT INTERVIEWS: MR. LEO SCARPINO
AMAX COAL COMPANY

Mr. Scarpino interviewed four of the Coal Mining Technology students, who had previous electronics background, for possible jobs with AMAX Coal Company.

MARCH 29, 1973
GUEST SPEAKER: MR. CHARLES JONES
AMAX COAL COMPANY

Mr. Jones spoke to the class, at the Wabash Mine, on dust samplers and noise control. This gave the students more insight as to what the law requires on the taking of dust and noise samples, and what is involved in the noise and dust control areas of mining. The students also had an opportunity to use the equipment which is used to take noise and dust samples in a coal mine.

FIELD TRIP: U.S. BUREAU OF MINES AND HEALTH AND SAFETY SEMINAR
EVANSVILLE, INDIANA

Five students and one instructor attended this seminar which was concerning coal mine safety, and the key types of machinery used in coal mining.

APRIL 6, 1973
FIELD TRIP: BRYCE COAL MINE — BRIGHT MINE
ENGLAND CITY, INDIANA — HENDERSON, INDIANA

At the Bryce Mine, the students saw the complete procedures of the surface mining operation. The students were permitted to ride in some of the coal stripping machines while they were in operation to see exactly what was involved in the removal of the overburden of the coal. They watched the haulage of the coal from the mine to the coal dump, and from the coal dump to conveyor belt, or into the rock and coal crushing building in which the coal was sized and loaded onto train cars.

At the Bright Mine, the students watched the blasting of the overburden and the haulage of coal with large coal trucks which dumped directly into train cars located below them. The coal was then hauled to the Henderson dock where it was loaded onto barges.

APRIL 6, 1973
GUEST SPEAKER: MR. MIKE HENSEN

Mr. Hansen spoke to the class on the subject of roof and rib control as used in coal mines.

APRIL 27, 1973
INSTRUCTOR TOURING: INLAND STEEL COMPANY
WHITEHALL, ILLINOIS

Mr. Bonbarick and Mr. Linder visited the Inland Steel Company's training facilities and studied the use of mining

machines, electricity, hydraulics, etc. Later in the afternoon, they visited with Mr. Brad Sullivan at Orland HS also. They learned how electric facilities and personnel maintenance for classes in the maintenance of electricity, hydraulics, etc.

MAY 7, 1973
GUEST SPEAKER: MR. HAROLD COLE
ILLINOIS DEPARTMENT OF MINES AND MINERALS

Mr. Cole spent the afternoon with the Carl Minnix Technology class bringing them up to date on what was happening in the coal mining industry relating to the State of Illinois Reports: Work of Mines and Minerals.

MAY 14, 1973
STUDENT INTERVIEWS: OLIVE HYDE LIBRARY
ARLINGTON, ILLINOIS

Three students from the Carl Minnix Technology class interviewed at Orland Hyde Library.

MAY 14, 1973
GUEST SPEAKER: MR. MIKE GIBBS
ARC CAD, LIBRARY

Mr. Gibbs spent the afternoon with the class on the subject of input and its control.

MAY 14, 1973 AND MAY 17, 1973
FIELD TRIP: AIRCO CARTER ROAD
ROCKFORD, ILLINOIS

The students toured this site to see vessels, see work done, and see contractors workers better used with the name and entry type of activity.

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[illegible]

[illegible]

[illegible]

[illegible]

The instructions are for students attending Bric Arts and Design [illegible] Bric Arts and Design [illegible] Instructions are written to the U.S. Bureau of Prisons to teach Arts and Design [illegible] at the Fort Worth Federal Arts and Design [illegible] Instructions include the assembly of Arts and Design [illegible] Arts and Design [illegible] Arts and Design [illegible] etc. to get accurate readings from both Arts and Design [illegible] instruments.

[illegible]

Prior Electricity Maintenance I and II were offered at Federal Arts and Design [illegible] in cooperation with [illegible] Arts and Design [illegible] Arts and Design [illegible] Arts and Design

PERSONAL RECORD

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Rodney Linder, Instructor
107 South Spring
Princeton, Indiana 47670

Telephone: 812-385-3560

Personal Details:

Age	32
Birthdate	December 22, 1941
Birthplace	Centralia, Illinois
Height	5'11"
Weight	190
Health	Excellent
Married	
Three Children	

Education:

B.S. in Management - Southern Illinois University

Various State and Federal Mining Schools

Mining Certification:

Mine Manager - First Class - State of Illinois

Competency Certificate as Coal Miner - State of Illinois

Certification as Instructor by U.S. Department of the Interior in most areas of Mining

Mining Experience:

Industrial Engineer

Administrative Manager

Project Foreman

Section Foreman

Instructor

Teaching Experience:

Industrial

Junior College level

PERSONAL RECORD

Joseph H. Berberich, Instructor
R. R. 3
Mt. Carmel, Illinois

Telephone: 618-262-8120

BEST COPY AVAILABLE

Personal Details:

Age	33
Birthdate	September 23, 1940
Birthplace	Mt. Carmel, Illinois
Height	5'8½"
Weight	170 lbs.
Health	Excellent
Married	
One Child	

Education:

B.S. - Agricultural Education - Southern Illinois University
M.S. - Agronomy - Southern Illinois University
Post Graduate - 27 quarter hours - Occupational Curriculum Development
Agricultural Education
-University of Illinois
- 12 quarter hours - Planning Occupational Facilities
Occupational Guidance
Administration and Guidance of Occ. Ed.
-Southern Illinois University

In-Service Training and Technical Schools
Massey-Ferguson Service Training School - Hydraulics & Combines
Joy Maintenance Training School - Coal Mine Machines
U.S. Bureau of Mines - Dust and Noise Control
U.S. Bureau of Mines - Electrical Maintenance II and III
U.S. Bureau of Mines - Health & Safety Seminar
Illinois Bureau of Mines - Training Course in Coal Mining
Vickers Industrial Hydraulics Training School
Illinois State University - Mobile Hydraulic System
International Havestor Service Training School - Hydraulics and Diesel Fuel Pumps
Allis-Chalmers Service Training School - Hydraulics, Diesels, Turbochargers
Briggs & Stratton Service Training School - Carburetors, Starters, Engines

Work Experience:

Instructor - Wabash Valley College - Coal Mining Technology, Agri-Mechanics and Hydraulics - 1967 to present
Instructor - Teutopolis High School - Vocational Agriculture
Field Technician & Salesman - Dow Chemical Company
Foreign Student Orientation - Southern Illinois University

Mining Certifications:

Certified by the U.S. Department of the Interior as an instructor in virtually every area of coal mining.

PERSONAL RECORD

Stanley E. Greatline, Instructor
R. R. 3, Box 85
Albion, Illinois 62806

Telephone: 447-3379

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Personal Details:

Age	39
Birthdate	February 22, 1935
Birthplace	Olney, Illinois
Height	5'10"
Weight	200
Married	
Two Children	

Education:

Elkins Radio School - FCC Radio Telephone Operators License
Fort Gordon Signal School - Radio and Communication Repair and Maintenance
University of Evansville - B.S. Degree - Electrical Engineering
- Computer courses - Cobal Language Programming
RCA Data Processing School - Training in the use of RCA Spectra 70 Series Computers specializing in the use of Fortran IV
RCA Institutes - Course in Logic Design of Digital Systems and specialized computing equipment with emphasis on hardware flexibility
Southern Illinois University - M.S. Degree - Electrical Engineering
Digital Equipment Corporation - mini-computer interfacing
Joy Manufacturing Company - Electrical systems of Mining Equipment

Work Experience:

Lead Instructor - Electronic Technology - Wabash Valley College
Southern Illinois University - Scientific Programming Methods and Techniques
Potter and Brumfield Division of A.M.F. - Manager of Digital Applications
Telesis Engineering, Inc. - Senior Engineer Digital Electronics Group
McDonnell Aircraft Corporation - Staff Design Engineer
Martin Company - Junior Engineer
WGBF, Inc. - Transmitter Engineer
Illinois Broadcasting Company - Broadcasting Chief Engineer
Military Service - U.S. Army Signal School
Evansville Television, Inc. (WTVW) - Staff Engineer
Olney Broadcasting Company - Radio announcer and equipment maintenance
Boonville Broadcasting Company - Control Room Operator and Announcer

Other Qualifications:

First Class FCC Radio-Telephone License since 1956

Mining Certifications:

Qualified by U.S. Bureau of Mines for work on both surface and underground electrical systems.

PERSONAL RECORD

Garry L. Slankard, Instructor
P.O. Box 124
Allendale, Illinois 62410

Telephone: 618-299-3621

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Personal Details:

Age	28
Birthdate	September 30, 1945
Birthplace	Olney, Illinois
Height	5'8"
Weight	180
Health	Excellent
Married	
One child	

Education:

Electronics Ordinance Systems - U.S. Navy Fire Control
A.A.S. - Electronics Technology - Southern Illinois University - V.T.I.
B.S. - Occupational Education - Southern Illinois University
Graduate School - 12 quarter hours - Occupational Education
Joy Miner's Vacation School - Franklin Pennsylvania
Digital Equipment Corporation - Minicomputer Inter-facing - Maynard, Mass.
Various Technical Courses

Work Experience:

Mechanic - 1½ years

Oil Field Rotary Drilling - 2 years

U.S. Navy - radar, computers, & ordinance equipment operation & maintenance - 4 years

Lowrey Organ Sales & Service - 1½ years

Electronics Instructor - Wabash Valley College - 3 years

Technician in R & D project (communications system) - 6 months

Other Qualifications:

First class FCC radio telephone license

Mine Certification:

Certified by U.S. Bureau of Mines as Underground/surface electrical instructor

PLANNING AND DEVELOPMENT OF SIMULATED MINE

The training facilities needed for a new and innovative program like Coal Mining Technology are considerably different from the facilities needed for other occupational programs. The ultimate training, of course, would be in an actual mining situation, with the students working underground, operating equipment under the direct supervision and guidance of a trained instructor. However, training of this kind would necessitate one instructor for each student in the training program. It would also necessitate large expenditures for insurance, etc., since the students would be working under hazardous conditions. Through discussions with mining personnel and visits to mining operations in Southern Illinois, it was easy to determine that the actual training of an underground miner was very small, and in many cases almost non-existant. Our challange for developing training facilities at Wabash Valley College was to as nearly as possible simulate mining conditions above ground in less hazardous surroundings.

Two different simulated mining facilities were inspected; the Madisonville Area Vocational Center at Madisonville, Ky., and the Pennsylvania State University project at Florence, Pa. The equipment operation at these two schools differed greatly. Many valuable ideas were derived for the development of a simulated mine for Wabash Valley College.

The following is a description of facilities taken from the Pennsylvania State University project:

> "A simulated coal mine above ground and about an acre in overall dimensions will be built by the Association on a site located on Florence Mining Company property near New Florence, Pennsylvania, which has been approved by the Association and the Pennsylvania State University mining personnel. The proposed facility will include the necessary power, heat, telephone, heaters, fans, mobile mining machines, classroom office space, blackboards, storage areas, lamp racks, lockers, desks, and other items of equipment and supplies, required by the University for conduct of the training program. Sufficient space for trainees to operate machines will be part of the general design of the simulated mine.
>
> Mining equipment will consist of one or more types of modern mining machines, shuttle cars, roof bolters, loading machines, rock dusters, and related equipment now in use in the field."

The planning for the Pennsylvania State project was very beneficial in determining procedures and facilities needed for Wabash Valley College, however, it should be kept in mind that they were awarded $5A9,705.00 for the fulfillment of their objectives in this project.

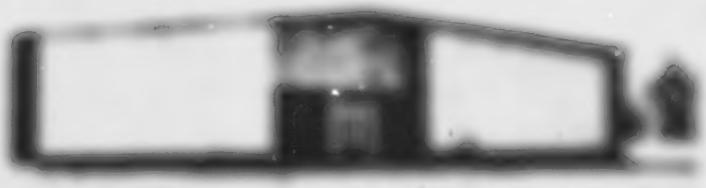
From the initial stages of the development of the Coal Mining Technology program at Wabash Valley College, it was obvious that developmental and operational expenditures had to be kept to a minimum. Several discussions were held within the initial steering committee for the Coal Mining Technology Program concerning the different ways possible for the development of a simulated mine at a price that was in our reach. After many avenues were explored, it was decided to purchase an industrial

buildings shell and complete industrial site owned by the Mt. Carmel Industrial Committee. This non-profit citizen formed organization had constructed a 25,000 square foot three way expandable building in Mt. Carmel for the purpose of attracting an industry. Since no industry had accepted the offer of the Building, it was offered to Wabash Valley College at a token price for the development of the simulated mine. A copy of the building and its specifications as promoted by the Mt. Carmel area industrial committee follows:

NOW!

READY FOR

IMMEDIATE OCCUPANCY

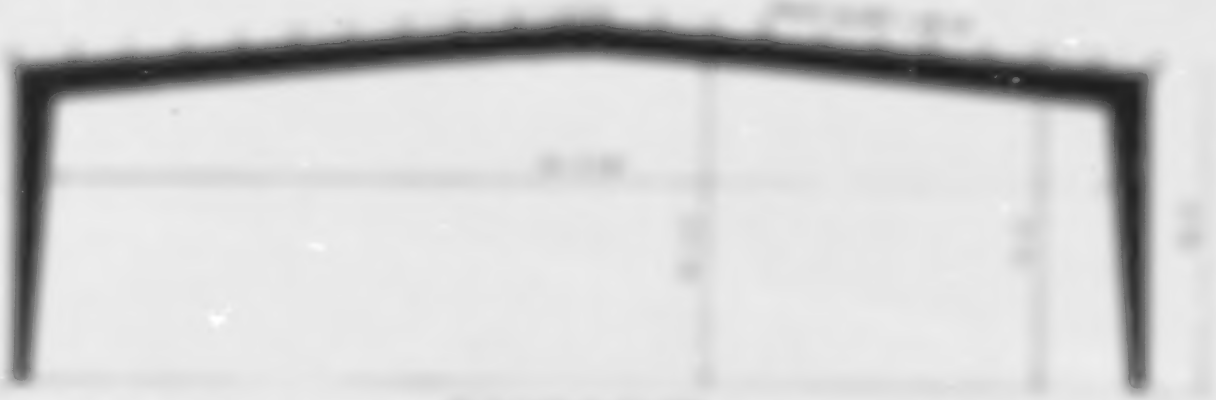


20,000ft. 3 Way Expandable Building

In

Mt. Carmel, Illinois

BUILDING SPECIFICATIONS



9th Supreme Judicial Circuit

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COAL MINE TECHNOLOGY BUILDING

100' × 200'

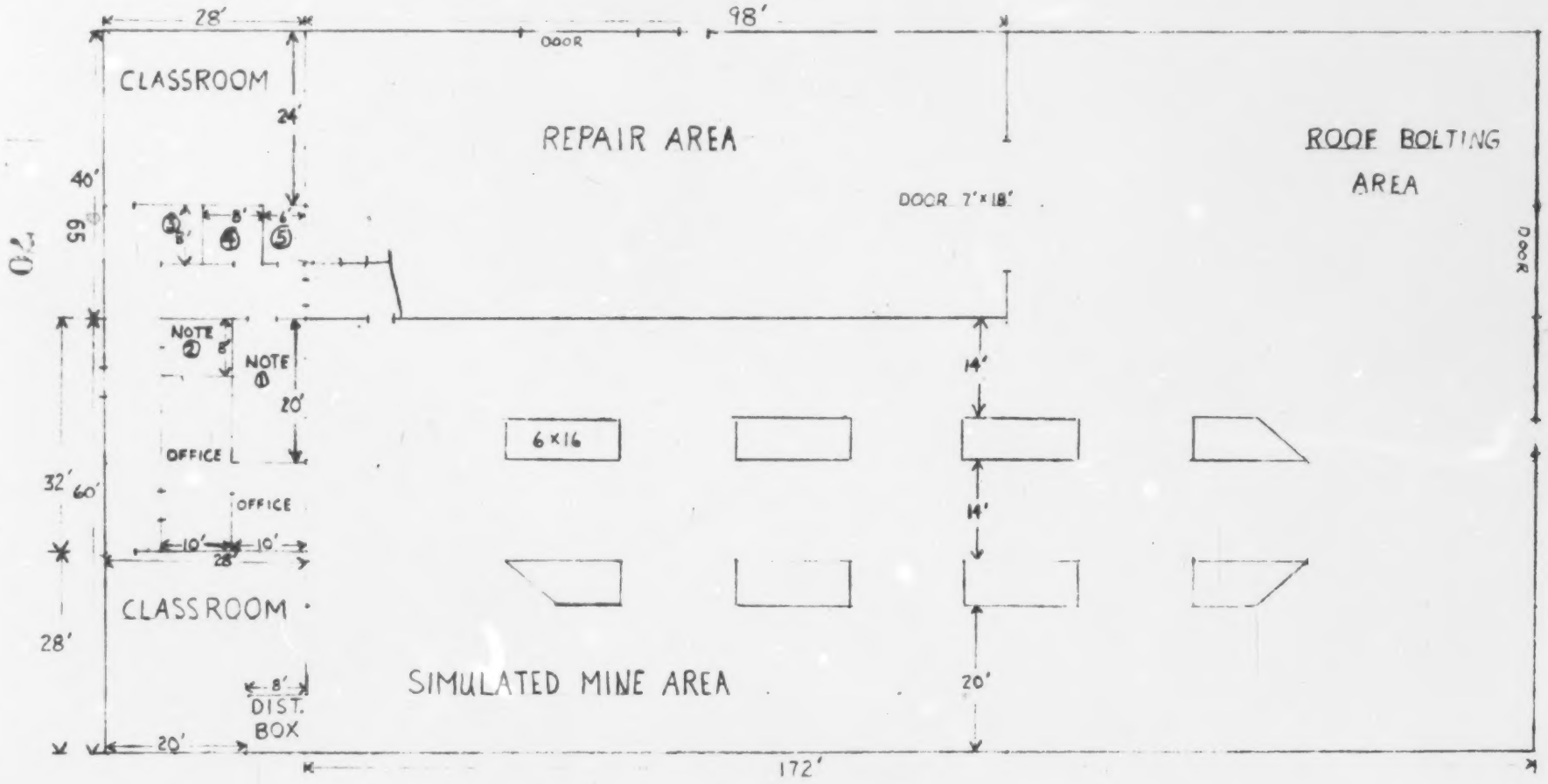
SCALE: 1/16 = 1

N →

NOTES

① MENS SHOWER
② LADIES RESTROOM
③ DISPLAY AREA
④ FURNACE ROOM
⑤ CUSTODIAL STORAGE

Figure 3



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FUNDING

PROCUREMENT OF EQUIPMENT AND MATERIALS

The funding and procurement of equipment and materials for the Coal Mining Technology Program has probably been the most difficult, but also the most interesting part of the planning, development, and implementation for this new and innovative program. It is also one of the major research objectives of this total project, since recommendations are to be made regarding future funding for new and innovative program development. Many approaches were made to get the project funded both before and after the proposal was submitted to DVTE for this Research and Development contract. The different approaches and funding requests will be illustrated in the order in which they were developed, altered, and resubmitted, etc.

From the beginning it was known that a program of this kind would be very expensive and assistance with funding would be necessary. Mr. Harold Odle had discussed requirement of funds and also possibilities of funding from the Federal Bureau of Mines or from Manpower. Mr. Chuck Harrison from AMAX Coal Company had discussed the possibility of providing some salvaged mining equipment if some could be located. The Honorable Roman C. Pucinski discussed coal mining with the writer at the American Vocational Association meeting in Chicago and offered his assistance in trying to promote funding.

As a result of this governmental interested, I contacted Representatives George Shipley, and Kenneth Gray, and Senator Charles Percy (as well as state officials) for their assistance in getting the project funded. Replies were received from all parties. Letters were written in our behalf by all except Senator Percy who felt that it should be a state affair, and that it would not be appropriate for a U.S. Senator to become involved. Copies of letters are included in the appendix. Many persons showed a great deal of interest in the future of coal mining, and our program to train miners.

The first major donation came when AMAX announced the closing of the Thunderbird mine near Terre Haute, Indiana. The following announcement was released by AMAX on November 22, 1972.

> Indianapolis, November 22, 1972--Amax Coal Company officials met recently with representatives of Wabash Valley College, Mt. Carmel, Illinois, to donate to the College eight large underground coal mining machines for use in Illinois' first Coal Mine Technology program.
>
> The program, the first accredited training program in coal mine technology in Illinois and the second such program at the junior college level in the nation, aims to provide participants with entry level skills in the coal industry. The equipment will be used by students for practical training under simulated mine conditions.
>
> The curriculum encompasses fundamental, safe underground mining procedures in such areas as mine ventilation, roof control, machine operation and maintenance, and mine rescue and safety. A pilot run of the nine-month program began in September with 20 students.
>
> Answering a Need
>
> Modernization of the coal industry over the past few years has created a demand for highly skilled

persons to man the 23 underground coal mines in southern Illinois. Those mines account for over 6,500 jobs, according to the Illinois Department of Mines and Minerals.

Besides the manpower needed at the various mines already in existence in the area, AMAX Coal Company is constructing a new underground mine near Keensburg, Illinois, that will come on stream next year.

We will employ 600 persons when the Wabash Mine reaches full production, said H. Elkins Payne, Jr., AMAX Coal Company vice president for industrial relations. The mine is scheduled to produce 3.6 million tons of coal annually for Public Service of Indiana's Gibson generating station at Princeton, Indiana.

To help meet the rapidly expanding demand for skilled personnel at the Wabash facility and other mines being planned for southern Illinois, Wabash Valley College responded by developing the mine program in less than one year.

Dr. John L. Cox, president of the College, in receiving the AMAX donation of equipment, credited the efforts of many people involved in the development of the program, including Harold Odle, Illinois Department of Mines and Minerals; Clem Dovidas, Federal Bureau of Mines; Herman Ahlfield, Dean of Instruction, Wabash Valley College; Kenneth Wells, United Mine Workers of America; M.E. Hopkins, Illinois Mining Institute; Sam Beard, Superintendent of Wabash Mine, AMAX Coal Company, and Charles Harrison, Manager of Employee Development, AMAX Coal Company.

Pictures and illustrations of part of the donated equipment follows:

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IT WORKS! [illegible] big chain saw regulator Charles Carlson as he shows a real leading [illegible] of Illinois Eastern Junior Colleges administration. Left to right are [illegible], Dean of Instruction; Dr. John Cox, president, Wabash Valley College; Mr. [illegible], chancellor, Illinois Eastern Junior Colleges; Jesse H. Sargent, dean of [illegible] affairs, IEJC; and Charles Harrison, manager, employee development, [illegible] Coal Company.

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THE END LOOKS [illegible] to fascinating on board exercises and the chancellor of Illinois Examiners Junior College. Left to right are William Brydwick, Sir James Spooner, Chancellor, and Conrad Dunn.

POSING IN FRONT of the new tower of the Coal Mining Technology Program and a leading marbler donated by AMAX Coal Company are, left to right, Ivan Rivard, Sir James Spooner and Dr. John Fox.

Soon after receiving the donation of airship equipment, a proposal was submitted by Mr. Harold Sills on our behalf to Mr. Bob Gray, Special Assistant to Governor Spirin, asking the State Government for special funding. The budget was set at some minimal figures and included only those items which we knew it would be impossible to assemble without. A copy of this budget as submitted in September, 1972 follows:

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B. [illegible] [illegible] [illegible] [illegible]

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	Estimated Budget Requested from the DVTE	Local Contribution	Total
Salaries (Based on 1972-73 school year)			
1. Project Director 30% for 12 mo.	-0-	$ 5,250.00	$ 5,250.00
2. Secretary	-0-	1,000.00	1,000.00
3. Instruction:			
Joe Berberich 100% for 9 mo.	-0-	11,700.00	11,700.00
Bob Adams (part time)	-0-	2,000.00	2,000.00
Stanley Greatline (part time)	-0-	1,000.00	1,000.00
Garry Slankard (part time)	-0-	1,000.00	1,000.00
4. Research and Development			
Joe Berberich (2 mo. summer)	$ 2,600.00	-0-	2,600.00
Bob Adams (1 mo. summer)	1,255.00	-0-	1,255.00
Stanley Greatline (1 mo. summer)	1,266.67	-0-	1,266.67
Garry Slankard (1 mo. summer)	1,033.33	-0-	1,033.33
AV Media Coordinator 20% 12 mo.	1,440.00	-0-	1,440.00
Secretary 3 months	1,000.00	-0-	1,000.00
Contractual Services			
1. Lease of Simulated Mine, etc.	-0-	81,000.00	81,000.00
2. Mining Equipment	-0-	300,000.00	300,000.00
3. Consultant Services 48 days @ $75	3,600.00	-0-	3,600.00
Commodities			
1. Learning Resource Materials (Testbooks, films, transparencies, slides, audio-visual supplies, etc.) This includes development of teaching material and purchase of pre-developed materials. It does not include equipment	9,000.00	-0-	9,000.00
Supplies & Materials	6,500.00	750.00	7,250.00

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	Estimated Budget Requested from the DVTE	Local Contributions	Total
IV. Travel			
Expenses for project staff to and conduct the program. Expenses for guest lecturers (contributed). All travel by project staff to be in accordance with state travel regulations	$ 500.00	$ 1,500.00	$ 2,000.00
V. Other Expense			
1. Postage, supplies and duplication of final report of project	800.00	-0-	800.00
2. Telephone, office supplies, testing, etc.	-0-	2,000.00	2,000.00
3. Registration--Instructor training	1,000.00		1,000.00
	$29,995.00	$407,200.00	$437,195.00

One can readily tell that the items which were funded were the extra expenses, devoted to research, development and instructor training which would not have been possible within our normal operating budget. However, they are items which greatly enhance the value of the instructional program for the students. It must be kept in mind that this was only a projected budget. Actual expenditures for the project are summarized as follows. Specific conclusions and recommendations on funding of new and innovative occupational programs will be illustrated in a later chapter entitled, Findings and Conclusions.

ACTUAL EXPENDITURES

COAL MINING TECHNOLOGY

		D.V.T.E.	Local	Total
I.	Salaries	$8,595.00	$ 2,725.00	$ 35,845.00
II.	Contractual Services	3,600.00	420,765.96	424,365.96
III.	Materials and Supplies	15,250.13	750.00	16,000.13
IV.	Travel	500.00	1,500.00	2,000.00
V.	Other Related Expenses	1,515.00	-0-	1,515.00
	TOTAL EXPENDITURES	$29,460.13	$450,265.96	$479,726.09

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In addition to the funding by Research and Development of the Division of Vocational-Technical Education, the program qualified for normal funding of on-going programs of the Community College Board and the Division of Vocational-Technical Education.

OTHER FUNDS AND EQUIPMENT

JOY MANUFACTURING: Donation of numerous teaching aids and electrical parts valued at approximately $10,000 to $15,000.

COMMONWEALTH EDISON: Donation of three used transformers valued at approximately $5,000 to $10,000.

ILLINOIS MINING INSTITUTE: Donation of $750 for the advancement of the Coal Mining Technology program. (Another $500 donation was received in 1973.)

The Illinois Mining Institute has for its object the advancement of the mining industry by encouraging and promoting the study and investigation of mining problems, by encouraging education in practical and scientific mining, and by diffusing information in regard to mining that would be of benefit to its members.

Membership includes any person directly engaged or interested in any branch of mining, mining supplies, mining appliances, or mining machinery. Any person desiring to become a member of the Institute shall fill out a blank for that purpose, giving his name, residence, age and occupation. This application shall be accompanied by the current year's dues as established by the Executive Board. Each application for membership shall be submitted to the Executive Board, who shall make an investigation as to the qualifications of the applicant, and shall be authorized

to elect to membership and issue a certificate of membership to such applicant subject to the ratification of the next regular meeting of the Institute.

Any person of distinction in mining may be elected an honorary member of the Institute by two-thirds vote of the members present at any regular meeting. Any member who has been an active member of the Institute and shall have retired from active business in mining may become an honorary member.

The annual dues for active members shall be determined by action of the Executive Board and any person in arrears on August 1, of the current year, after having been sent two notifications of dues, shall be dropped from membership. Members in arrears for dues will not receive the printed proceedings of the Institute.

Any active member may become a life member by the payment of $50.00 and shall be exempt from further payment of dues during his lifetime.

The annual meeting shall be held in the fall of each year and on such days and in such places as may be determined by the Executive Board of the Institute. Notice of all meetings shall be given at least thirty days in advance of such meetings.

Meetings of the executive board shall be held on the call of the president, or at the request of three members of the executive board, the president shall call a meeting of the board.

ROYAL ORDER OF THE RACCOONS. Scholarship of $1,000 to given to one or two worthy students pursuing the Coal Mining Technology program. [Another $1,000 scholarship was awarded in 1973]

The Royal Order of Raccoons is a fraternal organization composed of people who work in all levels of the coal mining industry. Membership is also held by employees of support industries that supply and service the coal mining industry.

The society of the Royal Order of Raccoons was organized in 1946, and the first convention was called by the Chief Coon to be held in Marion, Illinois in January, 1947.

In 1973 the Order elected to promote the development of technical skills in the coal mining industry by sponsoring two $500 scholarships to students interested in pursuing a degree in the mining field, the money to fund the scholarship to be provided by the membership fees contributed by each member of the Royal Order of the Raccoons.

Wabash Valley College was selected as the college to receive the scholarships, which were to be awarded to two outstanding students enrolled in the Coal Mining Technology Program.

MINING ELECTRICAL GROUP. Plans to donate to a scholarship fund in 1973.

The Mining Electrical Group [MEG] of Southern Illinois is composed of members who represent most of the major coal companies of Illinois and West Kentucky, major manufacturers, and suppliers who service their mines. The MEG meets on the first Thursday of each month excepting June, July, and August.

The program theme for 1974 is "Education and Training in the Coal Industry" and gives local schools in the area an opportunity to tell the members what type of training is available, and tell how their curriculum is intended to the coal mines.

[illegible]: Donations of $1,000 for 1973-74, and other $1,000 for 1974-75 school years. It is anticipated that these funds will be used for the advancement of the Coal Mining Technology program.

[illegible]: Wabash Valley College receives $50 reimbursement of equipment approved and purchased through normal funding.

A complete inventory of available equipment is included in the assembly.

PROGRAM PROMOTION

Many of the topics on program promotion are self-explanatory and will be of interest to their entirety. For this reason, the bulk of this subject will be newspaper articles, articles from national coal mining magazines, etc., as they were published. All articles which were selected for this publication relate directly to the development and implementation of this new and innovative program in Coal Mining Technology. Not nearly all of the related articles are included due to space. I feel that an apology should be made on the quality of some of the picture reproduction, however, in many cases, the original photographs were destroyed in a fire at the Republican Register in Mt. Sterling, Illinois.

All normal procedures which were utilized for program promotion by Wabash Valley College will not be illustrated. They are Student Personnel Services presentations to area high schools, presentations to all local advisory councils and administrative boards, and presentations to civic organizations by administrators and staff, etc.

The first formal presentation was to the Economic Development Conference. An article follows. Comments will be made only when additional explanation or information is needed on the following articles.

Recommendations

A course CMT-100, Orientation to Underground Coal Mining Safety be added to the catalog. This course would be primarily directed toward the working miner who does not wish to follow one or two year programs, however, needs a refresher course to enable him to be current on safety practices - Underground. This course would not be for the one and two year Coal Mining Technology student. Content would be a general overview of many of the items covered in depth in other courses. Content to include but not be limited to: Responsibility of Mine Management, Use of the Self-Rescuers, Mine Check-in and out Systems, Roof and Rib Control, Fundamentals of Accident Prevention, Dust and Noise Control, Rock Dusting, Permissibility, First Aid, Fire Fighting, Ventilation, Mine Gases, and Oxygen Deficiency. All topics would be of a refresher nature without depth.

All present courses listed in the Coal Mining Technology Program and their present plans for improvement are excellent. The Coal Mining Technology building is an excellent facilitty, and shows much forward thinking from the Wabash Valley College Staff and Faculty.

Summary

In summary, the total program is an excellent one. The State of Illinois should be very proud of its accomplshments.

The evaluation from the State of Illinois, Department of Mines and Minerals was requested from Mr. Harold Odle, Mining Safety Training Specialist. This evaluation is self-explanatory, and is included in its entirety.

STATE OF ILLINOIS

DEPARTMENT OF MINES AND MINERALS

EXPLOSIVES DIVISION

900 EAST MAIN STREET

BENTON, ILLINOIS 62812

April 11, 1974

Mr. Herman E. Ahlfield
Dean of Instruction
Wabash Valley College
Mount Carmel, Illinois

Dear Mr. Ahlfield:

I appreciate the opportunity to evaluate your coal mine technology program. It has been a privilege for me personnally to represent the state in helping establish your program. I count it a privilege to have been one of the first to suggest that Illinois should establish this type of program. It has been a good experience for me to represent the state of Illinois, Department of Mines and Minerals, both to you and our interest to the Illinois Board of Higher Education. You are to be commended for taking the initiative in the development of this training program to produce safer and more productive coal miners.

Adequate training for coal miners and prospective coal miners has recently come into great demand in the United States and in each coal mining state. Legislators, administrators, labor unions, and many other interested groups have lobbied over the past decade to establish proper training facilities for coal miners, mine inspectors, and prospective coal miners. Now the desire has become reality and with reality has come responsibility of impleementation. Most states have facilitated training through legislation and with the assistance of federal grants. In many cases new state laws have required that all coal miners should successfully complete a basic training course. Also, mine training for mine electricians and mine foremen is being provided by some states including Illinois but we have been in need of help from educational institutions to better upgrade the necessary skills.

There are many questions still unanswered concerning the necessary skills which are required to perform the job in the field (in the mine). The basic training course for new miners would contain different material than a course for presently employed miners. You at Wabash have developed a training program which can satisfy some of the needs of both an entry level miner and a presently employed miner. Your curriculum has been built on sound adult

educational principles, conforming to the legal requirements of the state and federal governments. As more and more emphasis is placed on safety in mines, mine training must be based on the relevant needs of the mine activities and tasks in the Illinois coal mine.

In short, the objective of the Department of Mines and Minerals has been to meet the responsibility to the industry for both employed and entry level training which will enhance the coal miner's job by making him a more thorough and knowledgeable man.

I know that your primary objectives have been approximately the same as the Department's and you have been meeting the responsibilities to the people of your Junior College District and also to our industry. You have taught not only job skills but have also instructed the student in his responsibilities toward himself, the employer, the community, and the law. This has been a major task since not all participants have had the same educational background. Therefore, you have really had multiple starting places in your curriculum and you have overcome this obstacle with good skill.

You have accomplished your objectives and ours in realizing the training of unskilled men so that they will be equipped with the necessary information to perform their tasks with more excellence. However, often the employees have not been given the tools nor the comprehension or community resources or psychological preparation to keep up with the technological and recent developments. You are, therefore, preparing your students to react favorably to new technology and new laws with proper understanding.

The key, in my opinion, to modern day training should be a program to help the student understand the economics of productivity and participate in it as a safe and responsible employee. The effort to make mining safer and more responsive has been the goal of Wabash Valley College. In order to assist the miner in attaining his rightful place in our society, he must gain confidence in himself as a safe, productive individual. He must be trained/technologically prepared and trained on the latest equipment used in the mining activity. The miner, to contribute to the society, must be kept abreast of all legal and technological advances affecting their lives. Therefore, we feel that educational institutions such as yours is the place for a miner or prospective miner to upgrade his skills.

In the development of this program you have drawn on the expertise of the mining industry both operator and employee and also some representatives of the U.S. Bureau of Mines and the State Department of Mines and Minerals. It was my privilege to serve on the original committee and later the advisory board for this program. You have always touched base with all segments of our industry which makes your program a meaningful program with such input from the industry itself. I believe that one of the things which has made your program an outstanding program is that you have listened to those people who are in a position to know what was needed, and then made your program decisions based on your accumulated information. Too often, educational institutions have dictated through their own educators what should be in a techni-

coal program at this time and have trained not people who really didn't have the needed skills required by the industry. I definitely feel that the coal mine program at Rahnek College is based upon the needs of the industry. This is especially important since Rahnek College was the first college to be involved in the training of coal miners in the State of Illinois.

You at Rahnek Valley College can be justly proud of the training facilities which you have worked so diligently to accomplish. This being the first such facility in the State of Illinois, and the fact that it contains a simulated mine which surpasses others which have been built at greater cost in other states is indeed a tribute to your staff. It will provide the opportunity for your students to get operational experience without the hazards of an underground situation. The operation of the various pieces of underground equipment under the direct supervision of experienced operators will without question make your students safer, more productive miners. You are to be commended for your untiring efforts and total disregard for the cost factors involved in establishing such a program. I personally regret that I have thus far been unable to help you in attaining any state or federal monies to assist you in developing this very worthy program. I would recommend that we continue to explore the possibilities for additional funding for the purpose of further developing your simulated mine and your coal mine building. Also, to further develop your coal mine technology program and to supplement your staff.

The staff which you were able to acquire and train in such a period of time has indeed been a marvel to me after dealing with some of the companies who have been remiss in training and developing their staffs. You have experience on your present staff to meet all of the important areas required for both surface and underground mining such as, roof and rib control, ventilation, first aid, and various repair technologies. I personally appreciate the fact that you have on your staff a man with several years as a union man and also as a supervisory employee who also has the degree in the teaching field. Your instructors are certainly above the normal classroom teacher who complains about being required to teach several subjects. Your instructors appear very enthusiastic about their subject matter and also toward their students. It is obvious that your teachers are dedicated to providing quality instruction in your coal mine technology program. I have considered it a privilege to be a visiting lecturer and to have personally witnessed on many occasions the genuine interest and dedication on the part of both the instructor and student. I have also been happy to see that you have used many movies, slides, and other visual aids to supplement your lectures and discussion. It has also been my privilege to accompany your students on some of their field trips to the various coal mines to witness your students receive hands on the field trips and in your simulated mine and repair area across many highly of your program. As we all know, it is most difficult to translate curriculum skills to actual work experience, but I believe that your program is doing an excellent job in preparing your students to do this.

In summary, I would say that the coal mining technology program at Rahnek Valley College is a great asset to the safety and produc-

Sincerely,

Harold E. White
Area Safety Training
Specialist

HEW:jmm

The application from the National Bureau of Prisons was requested from Mr. Alan Bertoni, Supervisor - Training Center #5, U.S. Department of the Interior, Bureau of Prisons, and is included in the packet.

[redacted]

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COAL MINING TECHNOLOGY EVALUATION

The Coal Mining Technology Program at Wabash Valley College has been very rewarding to me as well as to the students involved. In general, I feel that historic opinions of the coal mining industry are shared by people who have not been associated with the industry, or have not had the opportunity to experience actual facts. The mythical image of a coal miner is rapidly being replaced by one of a highly skilled worker operating sophisticated electrical machinery, coupled with some of the best geological engineering techniques available today.

After an extensive education program during the Summer months by the exceptionally cooperative and qualified people with the State of Illinois Department of Mines and Minerals, I feel qualified to discuss many areas of mining outside my field of Electronics as well as the direct application of electrical principles to mining machinery. This is augmented by our visit to the Joy Manufacturing Company plant where we were schooled in the operation and maintenance of the latest types of mining machinery.

In this critical time of our country's struggle for energy independence, I feel we at Wabash Valley College have an opportunity to play an important role in the advancement of the coal industry through education of the public as well as upgrading the quality of the work force within the mine.

The product of our program is a better educated, more qualified employee for the coal industry. This employee contributes as a more efficient worker, as well as a safety conscious member of the industry. In years to come, I feel this type of program will prove to be well worth the time, effort and money spent.

Stanley Greatline, Lead Instructor
Electronics Technology

COMMENTS ON COAL MINING TECHNOLOGY PROGRAM

I feel honored to have participated, if only to a limited degree, in the development and implementation of our Coal Mining Technology program at Wabash Valley College. I am extremely delighted at the support by the coal mining industry and state and federal agencies.

In touring coal mines in Illinois and Indiana, I have met with people of the industry and discussed their problems with them. I feel that a need exists for training in this area, and although it will be a challenge to both education and the industry, the combined efforts of both will certainly not fail with the momentum the program has already gained. But it will take more hard work and the same kind of excellent leadership and management already exhibited by Wabash Valley College and the industry.

As a Federal Bureau qualified instructor of the electricity courses in our program, I have never before felt that it was so important to do as good job. Members of several coal companies and Federal and State agencies have already expressed their confidence in our program, and I am determined, as are the other members of our Coal Mine Technology team, that I will do my part to provide the best service possible to the industry, and to deliver more than we promised.

I think I can safely say that Wabash Valley College will reach out as far as necessary to provide the best educational opportunities in any area where a need exists.

Garry L. Slankard, Instructor
Electronics Technology Program

EVALUATION OF THE COAL MINING TECHNOLOGY PROGRAM

The first year of Coal Mining Technology at Wabash Valley College was very rewarding largely because of the excellent cooperation with industry and other groups and agencies. The amount of assistance from the State Department and the Federal Bureau of Mines was invaluable. I was favorably impressed by the overall long-range planning and the generous attitudes on the part of the many diverse groups that were willing to give of their time and talents to help in development of a workable program. Our students were very receptive and came with a strong desire to learn the correct procedures of coal mining with employment the number one goal.

I believe that the first year program would have been strengthened had the students been able to spend more time in actual participation. If the Wabash Mine could have opened on schedule during the first year, the students would have been given further inspiration. With the development of the Wabash Valley College simulated mine, the students now can become involved in the actual mining operations which will be very helpful in the future.

Robert W. Adams
Physical Science Instructor

FINDINGS AND CONCLUSIONS

The findings and conclusions of this project are few, but they are very far reaching. The total contact with personnel from the Coal Mining Industry, the State of Illinois Department of Mines and Minerals, and the Mining Enforcement and Safety Administration bear out the necessity for training persons to work in coal mines. This need for training can be categorized into three general areas, but it must be more specifically defined for job training.

The three general areas would be: (1) training persons with no prior experience or training to work at entry level jobs in coal mines; (2) train persons or retrain persons who have previously worked in coal mines, but have little or no training in safety, first aid, and profit attitude; and (3) upgrading skills of presently employed miners.

Wabash Valley College is attempting training for all three areas. This project covered the first year classes which teach entry level skill to prepare them for beginning jobs in the mines. The two-year Associate in Applied Science Degree program, which was approved after this project began, trains persons in equipment operation and repair. These persons must have the one-year program or previous experience in coal mining. The two major areas of training are hydraulics and electrical maintenance. Wabash Valley College has been conducting classes for different mining companies, to train their employees to meet the requirements of M.E.S.A. for electricians.

This training has been conducted both at the school facilities and at the mining locations. There is evidence that much more training will be required to meet the needs of industry through this "Out Reach" approach. We are also providing orientation classes for new employees of AMAX Coal Company. We are assured that this need will also increase in the near future. The recommendations from the State Department of Mines and Minerals and from AMAX request that a new course be developed specifically for this purpose instead of using our basic Introduction to Coal Mining Course. This will probably be submitted for approval sometime in the near future. Its' need can be shown by the over one hundred AMAX employees that are ready for orientation at the present time.

With the formation of each budget since the very first estimate, one must conclude that supplementary funding is needed for the development and implementation of a new and innovative program. It is possible to plan all known expenditures and estimate other known areas of need, but it is impossible to even guess all the expenses and pitfalls one will encounter when entering into a new venture with many unknowns. The process of developing a project which will meet any R.F.P. with a realistic itemized budget is not possible. If this were possible, there would be no need for the research and development project in the first place. Since it is not possible to determine costs in advance, I would recommend that some latitude be included in future funding of new and innovative occupational programs. I would recommend that DVTE should first determine that a school has indeed discovered a need, and

then set limits of funding, but not earmark the funds for specific items. DVTE would, of course, have to closely monitor the progress of the project.

This contract has provided funds for many items which will be of great benefit to the Coal Mining Technology Program at Wabash Valley College. These items would not have been available from normal budget funds. The program could have proceeded without some of the items, but the educational value is greatly enhanced by their availability. The major items of importance are the audio visual materials which were purchased and developed. The ones which were developed will be the most beneficial since many are taken directly from parts manuals and schematics of equipment used in the industry. The most expensive item of the total program was the development of the simulated mine. In my opinion, this is the most beneficial part of the instruction in this program. It is also a function which this R.F.P. would not fund. The development of the simulated mine is well underway, however, much remains to be accomplished. There are many possibilities for further simulation as time and funds permit.

It would be my recommendation that DVTE consider the extension of the project. Since much has been accomplished, it could be considered a demonstration project for others to view the developments on an organized basis. It would be well worth the expense and effort to collect and assemble follow-up information on the coal mining students in more than a cursory manner. I would recommend funds for personal interviews at the end of one year and again at the end of the second year to ascertain the effectiveness of the

students in comparison to workers who go to work in car's miles without formal training. It would give information regarding absenteeism to management, etc.

The project has been very interesting, even though very demanding for the writer. No greater area of job satisfaction is possible than knowing that a need exists and being able to meet that need. The two needs which will be alleviated by this program are the need of industry for trained employees, and the needs of the unemployed or underemployed by providing them with a salable skill through training.

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I. [illegible] 111

II. [illegible] [illegible] 116

III. [illegible] 121

IV. [illegible] 126

V. [illegible] 127

VI. [illegible]

A. [illegible] 130

B. [illegible] 134

C. [illegible] 136

VII. [illegible] 137

VIII. [illegible] [illegible] 140

IX. [illegible] [illegible] 141

X. [illegible] 142

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ILLINOIS EASTERN JUNIOR COLLEGES

COURSE BRIEF

Prepared by Rod Linder Approved by _____
(Department Chairman)

Date January 8, 1974

COURSE: Title Accident Prevention and Safety Number CMS-132

Current Course Description:
Because the injury and fatality rates of coal mines are consistently worse then those of most other industries the need for safety education is a prerequisite to safety in coal mines. Of all couses of accidents, the most numerous and baffling are those due to human behavior and presonality.

Number of Hours: A) Credit 3 B) Lecture 3 C) Contact 3 D) "Lab" __
E) Quiz __

Prerequisites: None

Course Objectives: It is the objective of this course to have the students understand the causes and the reasons for the occurance of most coal mine accidents and develop the ability to recognize unsafe working havits and conditions, and have the students develop a positive attitude toward preventing accidents and safe working habits.

Topical Outline (Attach with approximate amount of time allocated to each unit.) See attached sheet

Text or Texts:
1. Pass out material from Bureau of Mines

Bibliography (Attach if applicable.)
See attached list applicable to coal mining Technology

Required Reading:

Other Course Requirements (Field Trips, Special Projects, Recommended Reading, Etc.)
Field Trips to Coal Mines

Methods of Instruction (By Type):
1. Lecture
2. Guest Speakers
3. Movies
4. Demonstration
5. Overhead Transparencies
6. Tape Recorder

Names of Instructors who have taught the Course during the last two years:
J. H. Berberich

JHK:amb (Please attach other pertinent prepared materials.) 3/6/70

Topical Course Outline

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"Accident Prevention and Safety"

Days — Topic

1. Introduction
2. Background of and need for the course
3. Magnitude of the problem
4. Accident costs
   a. Direct
   b. Indirect
   c. Total cost
5. Attitudes towards accident prevention and training in safety.
6. What accident prevention is, what it accomplishes, and how it can be achieved.
7. Why and how accidents occur
   a. Definition of an accident
   b. Causes of accidents
   c. The four "imps"
   d. Demonstration of the accident sequence
8. The three E's of accident prevention
   a. Engineering
   b. Enforcement
   c. Education
   d. Basic needs and wants
   e. Individual differences
   f. Why people take chances
   g. Need to change attitudes
9. Accidents from falls of roof and coal (rib)
   a. Factors affecting falls of roof and coal
   b. Study and analysis of roof fall fatalities
   c. Testing roof
   d. Timbering
   e. Roof bolting
   f. Removing pillars
10. Accidents from explosions and fires
   a. Mine explosions and factors in their prevention
      1. Ventilation
      2. Coal dust
      3. Methane
   b. Mine fires
      1. causes
      2. Prevention
      3. Control
11. Electrical accidents
   a. Causes
   b. Prevention
   c. Danger signs

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12. Accidents from hoisting and hualing coal
    a. Mine openings and transportation facilities
    b. underground haulage
    c. Haulage equipment
    d. Transproting equipment
13. Accidents from transprotation of personnel
14. Miscellaneous accidents
    a. Surface protection
    b. Underground protection
    c. Health and sanitation
    d. General safety measures
15. The supervisor's place in safety
    a. Qualifications of a good foreman
    b. Working climate
    c. Discipline
16. Rules and regulations
17. Job analysis for accident prevention
18. Accident investigation and reports
19. Placing responsibility for accidents
    a. Manegements responsibility
    b. Employer responsibility

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ILLINOIS EASTERN JUNIOR COLLEGES

COURSE BRIEF

Prepared by Rod Linder Approved by _____ (Department Chairman)

Date December 7, 1973

COURSE: Title Lamp and Detection Instruments Number CMT-13

Current Course Description: The purpose of this course is to instruct in the proper use and care of the premissible falme safety lamp and the various premissible methane detectors. It is also the purpose of this course to develpe the students ability to determine methane consectrations using these instruments and the ability to properly maintain them, and to test mine atmospheres with other instruments and gauges.

Number of Hours: A) Credit 4 B) Lecture 4 C) Contact 4 D) "Lab" _____ E) Quiz _____

Prerequisites:

Course Objectives: It is the objective of this course to have the students know and understand the insturments that are used in coal mines and how to properly use, read them, care for, and maintain them. The student knowledge and abilities will be evaluated by written tests and actual performance using the instruments in a coal mine or simulated coal mine cond.

Topical Outline (Attach with approximate amount of time allocated to each unit.) See Attached sheet

Text or Texts:

Underground mining Volume I by Joy Mfg. Co.

Bibliography (Attach if applicable.)

Required Reading:

Other Course Requirements (Field Trips, Special Projects, Recommended Reading, Etc.)

Field Trips to Coal Mines

Methods of Instruction (By Type):

1. Lecture
2. Demonstration
3. Student Performance
4. Tape Recorder
5. Overhead Transparencies
6. Movies
7. Guest Lectures

Names of Instructors who have taught the Course during the last two years:

J. H. Herberich

JHK:amb (Please attach other pertinent prepared materials.) 3/6/70

Typical Course Outline

Hours

3 I. Self Rescuer
A. MSA model W-65
1. Purpose
2. Operation and use
B. Dragger model 810
1. Purpose
2. Operation and use

6 2. Permissible Flame Safety Lamp. (Koehler)
A. Development of gas detectors
B. Description
C. Care and maintenance
D. Use
E. Limitations

1 3. Oxygen Deficiency and Methane Detecting Devices

3 4. Methanometer (MSA model W 402)
A. Introduction
B. Description
C. Procedure for operation
D. Maintenance

2 5. Methane Spotter (MSA)
A. Introduction
B. Description
C. Operation of Instrument

2 6. Methane Indicating Detector (Bacharach)
A. Introduction
B. Description
C. Operation of the instrument
D. Maintenance

3 7. Carbon Dioxide Indicator (Fyrite)
A. Introduction
B. Description
C. Operation
D. Maintenance

3 8. Carbon Monoxide Tester (MSA colorimetric)
A. Description
B. Inspection
C. Operation
D. Maintenance

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2 10. [illegible]
A. [illegible] of model 28
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6 11. [illegible]
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B. [illegible]
C. [illegible]
D. [illegible]

4 12. [illegible] interior [illegible]
A. Parts
B. [illegible]
C. [illegible]
D. [illegible]

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2 14. [illegible]
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A. [illegible]
B. [illegible]
C. [illegible]
D. [illegible]

1 16. [illegible]

[illegible] Total

Prepared by Robert E. Bass Approved by

Date January 15, 1971

Course Title Our Wise Atmosphere Number

Current Course Description:

A study or analysis of man's air as it relates to health and safety of the car. The most commonly encountered in cities and the properties of them. The fundamental physical laws pertaining to air and atmospheric pressure. The effect of temperature and pressure on gases within a mine.

Number of periods (1 period = 50 minutes) per lecture 2 in Content 2 in "Lab"

Prerequisites:

Course Objectives:

This course is designed to provide students with opportunity to study the nature of mine air and the gases encountered in mines. Principles of physics as they relate to gases are stressed.

Topical Outline (attach with appropriate amount of time allocated to each unit.)

Text or Texts: Coal Mining, Jones and Hunt, Bulletin 7, Pennsylvania State College, 1967.

Bibliography (attach if applicable.)

Required Facilities:

Other Course requirements (Field Trips, Special Projects, Assessment Results, etc.)

Methods of Instruction and Student Activities

Means of Evaluating Student Progress (Tests, Quizzes, Projects, etc.) to be used during the last two weeks:

Effects which this course is designed to produce (Objectives)

[illegible]

1. [illegible]
2. [illegible]

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

ILLINOIS EASTERN JUNIOR COLLEGES

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COURSE BRIEF

Prepared by Rod Linder Approved by _____ (Department Chairman)

Date December 7, 1973

COURSE: Title First Aid and Mine Rescue Number CMS-112

Current Course Description:
The training by instruction and demonstration, information is disseminated regarding safe & unsafe practices, with a view to reducing accidents as well as teaching the correct emergency aid for unjured persons. The additional purpose of this course is to familiarize the student with the principles of mine rescue operations and the actions to be taken by men underground in case of a mine disaster.

Number of Hours: A) Credit 3 B) Lecture 3 C) Contact 3 D) "Lab" __
E) Quiz __

Prerequisites: None

Course Objectives: 1. The student will perform the necessary and proper first-aid treatment to injured persons. 2. The student will recognize when an emergency has occured and is present in a mine. 3. The student will exercise proper method of exit from the mine during an emergency.

Topical Outline (Attach with approximate amount of time allocated to each unit.)

See attached sheets

Text or Texts: 1. "First Aid for the Mineral and Allied Industries" by U.S. Dept. of Interior bureau of Mines. 2. "First Aid and Mine Rescue Manual", Dept of Mines and Mineral State of Illinois.

Bibliography (Attach if applicable.)

See bibliography list applicable to Coal Mining Technology

Required Reading:

See Attached Sheet

Other Course Requirements (Field Trips, Special Projects, Recommended Reading, Etc.)

Field Trips

Methods of Instruction (By Type):
1. Demonstration
2. Lecture
3. Movies
4. Overhead Transparencies
5. Actual Practice and Participation

Names of Instructors who have taught the Course during the last two years:

J. H. Berberich

JHK:amb (Please attach other pertinent prepared materials.) 3/6/70

READING ASSIGNMENT

FIRST AID

TEXT: "First Aid for the Mineral and Allied Industries - A Bureau of Mines Instruction Manual" United States Department of the Interior - Bureau of Mines

Week	Topic	Pages
1	Ch. 1 - Introduction to First Aid	1-9
2	Ch. 2 - Anatomy of the Human Body	10-15
	Ch. 3 - First Aid Dressings	15-20
	Ch. 4 - Artificial Respiration	20-37
3	Ch. 5 - Control of Bleeding	40-51
	Ch. 6 - Shock and Fainting	52-57
4	Ch. 7 - Wounds and Dressing	58-86
	Ch. 8 - Closed Wounds & Foreign Bodies	87-93
5	Ch. 9 - Burns and Scalds	94-100
	Ch. 10 - Fractures and Dislocations	101-139
6	Ch. 11 - Handling and Transportation of Injured	140-153
	Ch. 12 - Miscellaneous	154-163
	Ch. 13 - Poisons	164-176

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COURSE OUTLINE
FIRST AID AND MINE RESCUE

HOURS	
2	1. Introduction to First Aid
3	2. Anatomy of Human Body a. Head b. Trunk c. Extremities d. Pressure Points
1	3. First Aid Dressings
4	4. Artificial Respiration a. Mouth to Mouth b. Holger Nielson Method c. Silvester Method d. Schafer Method
2	5. Control of Bleeding a. Veins b. Arteries c. Capillaries
1	6. Shock and Fainting
1	7. Wounds and Dressing
1	8. Burns and Scalds
1	9. Fractures and Dislocations
1	10. Transportation and Handling of Injured
1	11. Examination

HOURS	(MINE RESCUE)
6	1. Mine Fires and Explosions
	a. Causes b. Effects c. Procedure
3	2. Mine Rescue Apparatus
	a. McCas Breathing Apparatus b. All Service Gas Mask
8	3. Mine Rescue Efforts
	a. Barricades b. Ventilation c. Procedure
1	Examinations

ILLINOIS ARTIFICIAL JUNIOR COLLEGE

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COURSE OUTLINE

Prepared by Ray Linder Approved by _____
(Department Chairman)

Date Jan. 8, 1974

Course: Title Roof and Rib Control Number MTA152

Current Course Description: The purpose of this course is to develop a total awareness to the dangers in of falls of roof, face, and ribs for related mining personnel and to acquaint them with methods for preventing injuires and fatalities resulting from such danger.

Number of Hours: A) Credit 4 B) Lecture 4 C) Contact 4 D) "Lab" ___
E) Quiz ___

Prerequisites: None

Course Objectives: The student must to able to recognize dangerous conditions and when such recognition is forth coming know how to render such conditions

Detail Outline (Attach with appropriate amount of time allocated to each

Text or Texts: 1. Elements of Practical Coal Mining by Society of Mining Engineers. 2. Underground Mining Vol. I by Joy Manufacturing Co.

Bibliography (Attach if applicable.)

See attached list applicable to Coal Mining Technology

Required Reading:
Roof and Rib Controll by Department of Interior Bureau of Mines

Other Course Requirements (Field Trips, Special Projects, Recommended Reading, Etc.)

Field Trips to coal mine.

Methods of Instruction (by Type):
1. Lecture 4. Films
2. Demonstration 5. Field Trip
3. Overheads 6. Guest Speakers

Names of Instructors who have taught the Course during the last two years:

J. H. Herberich

(Please attach other pertinent prepared materials.)

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COURSE OUTLINE
ROOF AND RIB CONTROL

1. Introduction

   a. Statistics of fatal and nonfatal injuries to demonstrate the hazards from falls of roof and rib.

   b. The most hazardous part of a coal mine is within 25 feet of the working face

2. Roof Structure

   a. Primary roof is the main roof overlying the coalbed.

   b. Secondary roof is the immediate roof above the coalbed.

3. Conditions contributing to bad roof and rib:

   a. Stresses resulting from extraction
   b. Defects in overlying strata:
      1. Pots, clay veins, kettle bottoms, fossils, horsebacks, rolls, "slickensides", draw slate
      2. Faults, fissures, cavities

   c. Pressures from:

      1. Gas
      2. Water

   d. Air changes:

      1. Moisture
      2. Temperature

4. Roof inspection and testing:

   a. Visually inspectional

   b. Sound and vibration method

   c. Other methods

   d. Limitations of roof testing methods

5. Methods of supporting roof:

   a. general

   b. timbering - conventional:

      1. definition of the method
      2. Requirements for timbering
      3. Special timbering problems
      4. Advantages of timbering

6. Causes of falls of roof and rib:

   a. Improper evaluation

   b. Insufficient and improper support

   c. Excessive pressures

   d. Rotting timber and rock

   e. Faults and fissures and bumps

7. Roof Control plan:

   a. general

   b. Seat roof bolting plan

   c. Pillar recovery pole and methods

   d. Open end pillaring

8. Role of mining personnel in preventing falls of roof and rib:

   a. Duties of supervisors:

      1. Examine working areas thoroughly
      2. Adhere to adopted roof and rib control plan
      3. Instruct men concerning roof and rib plan
      4. Train timbermen and roof bolters
      5. Supervise proper installation of roof supports
      6. Plans up to see if roof control plan is strictly adhered to

   b. Duties of workmen:

      1. Make proper roof and rib examinations
      2. Trim down all loose material
      3. Set temporary supports
      4. Adhere to standard plan of minimum roof support
      5. Report unsafe conditions
      6. Do not advance beyond support roof in face area
      7. Alert fellow worker

[redacted]

[redacted]

[redacted]

[redacted]

[illegible]

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II. STATEMENT OF OBJECTIVES

The Coal Mining Technology program is designed to prepare students to get initial entry level jobs to work in underground coal mines.. At completion of the program, students will have the necessary technical skill to operate mine equipment in a safe and efficient manner. They will know how to react to possible dangers and what to do in case of emergencies.

V. STUDENTS.

(a) Recruitment.

The Vocational Guidance Department at Wabash Valley College conducts a vigorous recruitment program in all the high schools within Illinois Eastern Junior Colleges, District #529. High Schools are all visited at least twice per year, administrators and high school counselors are invited to the campus for group meetings, career days are attended by counselors, and student groups are invited to visit the campus.

V. STUDENTS.

(c) Selectivity - (Admissions)

1. All high school graduates are eligible.

2. Non-high school graduates over the age of 18 may enroll if they have shown proficiency through G.E.D. tests.

3. Non-graduates of high school may also apply for admission, if scholastic records and other information indicates to the satisfaction of the Student Personnel Service office that the student is able to do the calibre of work required to complete the program, the student may be admitted.

4. Students will be required to have a physical examination to determine eligibility for employment prior to being accepted.

V. STUDENTS.

(d) Job Initial Placement.

The local district will provide a placement service for students in the occupational programs. Files will be kept on each individual in three separate areas; permanent student files in the Student Personnel Office, individual files in the Office of the Counselors in the occupational areas and individual files in the major interest area of the student which will be an advisor.

Interviews will be held to determine interest areas and etc. for each student who is to be placed. Information will be collected from this method and local forms and questionnaires will be used to help in placement procedures.

Counseling will be provided on a group and individual basis concerning placement procedures, methods, and opportunities.

A file and information will be provided on job opportunities that are available plus information on campus visitation by local and/or out-of-district potential employers.

V. STUDENTS.

(e) Follow-up (Grads - Non-Grads).

Follow-up procedures on the One (1), Three (3), and Five (5), year plan will be established with employers of initial placement.

Time Table for first occupational students:

1973 Placement of the first occupational students.

1974 First year follow-up of 1973.

1975 First year follow-up of 1974.

1976 Third year follow-up of 1973 and
First year follow-up of 1975.

1977 Third year follow-up of 1974 and
First year follow-up of 1976.

1978 Fifth year follow-up of 1973 and
Third year follow-up of 1975 and
First year follow-up of 1977.

1979 Continued.

VI. ADVISORY COMMITTEE

WABASH VALLEY COLLEGE

COAL MINING TECHNOLOGY ADVISORY COMMITTEE

Mr. Charles R. Harrison
Supervisor - Training
AMAX Coal Company
105 S. Meridian Street
Indianapolis, Indiana 46225

Mr. Harold Odle
Safety Training Coordinator
State of Illinois
Department of Mines & Minerals
503 E. Main Street
Benton, Illinois

Mr. Clem Davidas
Supervisor-Training Center #5
U.S. Department of the Interior
Bureau of Mines
501 Busseron Street
Vincennes, Indiana 57591

Mr. Kenneth Weiss
President District 12
United Mine Workers of America
800 Reinch Building
Springfield, Illinois 62701

(Ex-Officio Members)

Dr. John Cox, President
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Mr. Herman Athfield
Director of Instructional Services
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Mr. Edward Bennett
Vocational Counselor
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Advisory committee meetings will be held at least once per quarter. The committee recommendations will receive due consideration and whenever feasible will be recommended to be put into effect. The committee will assist the instructors with recruitment, placement, and curriculum planning.

[redacted]

ILLINOIS EASTERN JUNIOR COLLEGES
District 529
WABASH VALLEY COLLEGE

PROPOSAL FOR OCCUPATIONAL PROGRAM IN

COAL MINING TECHNOLOGY

1 YEAR CERTIFICATE PROGRAM

[redacted]

		CONTACT HOURS PER WEEK CREDIT		
		CLASS	LABORATORY	HOURS
FIRST QUARTER				
• CMT 112	Introduction to Coal Mining	6	0	6
• CMT 122	Mining Law	4	0	4
• CMS 112	First Aid & Mine Rescue	4	0	4
MTH 112	Applied Mathematics	3	0	3
CMT 111	Freshman Orientation	1	0	1
	TOTAL HOURS FOR FIRST QUARTER	17	0	17
SECOND QUARTER				
• CMS 122	Coal Mine Atmosphere	4	0	4
ELE 132	Basic Welding	4	4	6
• CMT 132	Lamp & Detection Instruments	4	0	4
• CMS 132	Accident Prevention & Safety	4	2	6
	TOTAL HOURS FOR SECOND QUARTER	16	6	16
THIRD QUARTER				
• CMT 142	Mining Equipment	6	0	6
• CMS 142	Coal Mine Ventilation	4	0	4
• CMT 152	Roof & Rib Control	4	0	4
• CMT 162	Problems of Operating Underground Mines	4	2	6
	TOTAL HOURS FOR THIRD QUARTER	16	0	16
	TOTAL HOURS FOR PROGRAM	49	6	49

[redacted]

• NEW COURSES

[redacted]

[illegible] [illegible] [illegible]

This is a practical course in the use of microcomputers and projects pc working machines. It covers pc's projects systems, human getting, human getting, and more further with the microcomputer fields. They pc's also practice selection of processors, running boats, and getting common points to pc's machines. Specifications with and microcomputer input and processing pc's to practices. The classroom hours per week. Four lab hours per week. 3 quarter hours credit.

[illegible] [illegible] [illegible] [illegible]

The purpose of this course is to instruct in the proper use and care of the semiconductor fields safety laws and the various semiconductor devices processes. To ability to recognize devices characteristics safety these techniques and the ability to properly maintain them. To train persons to work with semiconductor with the various techniques and common. Four classroom hours per week. 3 quarter hours credit.

[illegible] [illegible] [illegible] [illegible]

Because the hours and fidelity rates of cost areas are considerably above that those of most other industries the need for safety education is a necessity to safety to cost areas. In all causes of accidents, the most dangerous and difficult are those due to human behavior and personality. Four classroom hours per week. 3 quarter hours credit.

[illegible] [illegible] [illegible]

Practices and devices involved in the production and business duties of cost. To study of equipment used to purchase and cost systems. To use of records, methods and techniques pc power to cost areas. Cost accounting equipment and machinery. Computing and control equipment. Four classroom hours per week. 3 quarter hours credit.

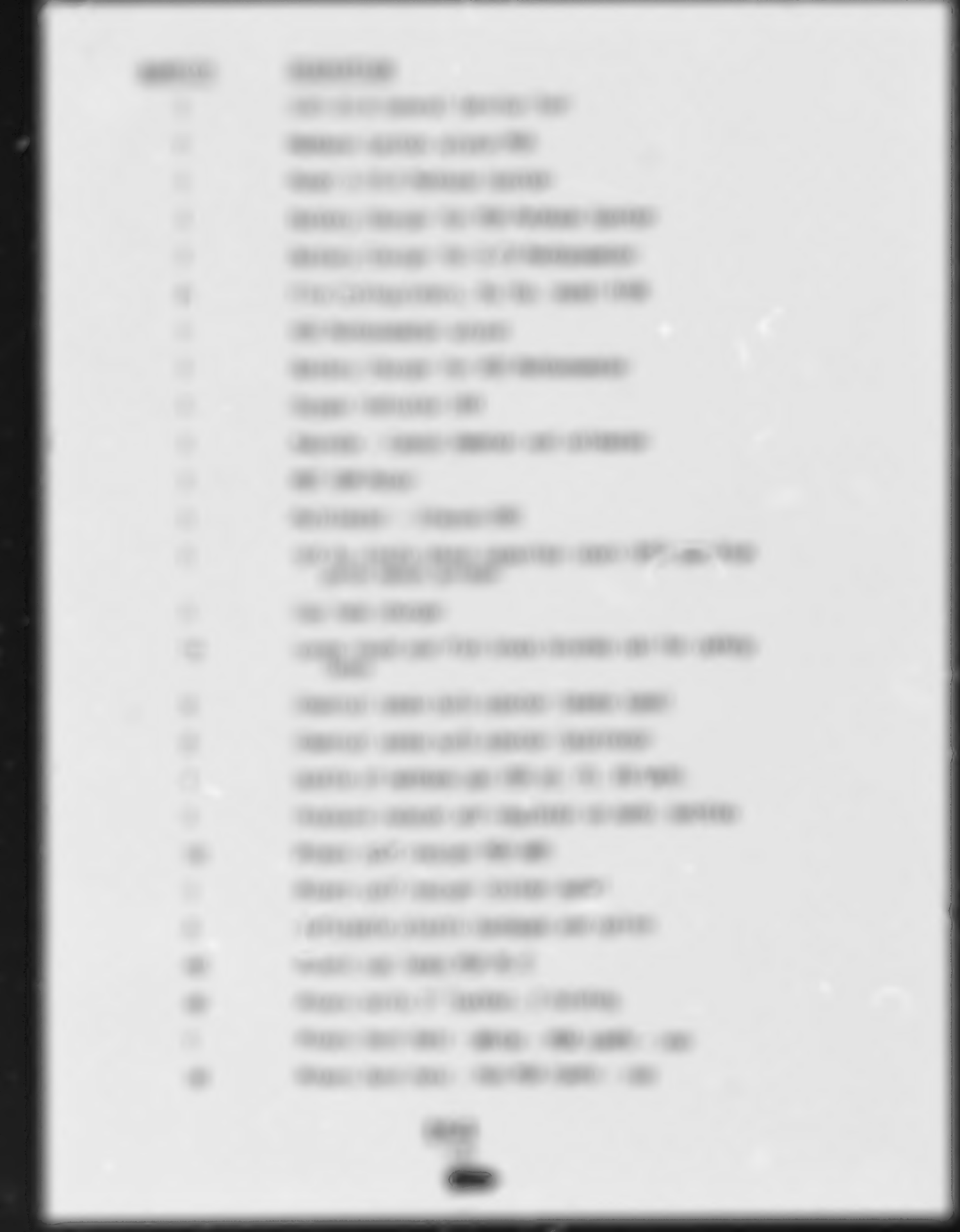
[illegible] [illegible] [illegible]

The goal of this course is to help the student understand area construction careers service find the work for in the machine fact. Four classroom hours per week. 3 quarter hours credit.

[illegible] [illegible] [illegible]

The purpose of this course is to develop a cost awareness in the manners of duty of cost. Take the role for student driving customer and to prepare them with methods for preventing injuries and hospitals resulting from such damage. Four classroom hours per week. 3 quarter hours credit.

[redacted]



QUANTITY	DESCRIPTION
	(Located in Applied Arts Building)
1	Spray Paint gun
1	Axial piston hyd. pump (Vickers from Joy PVB-5
1	Axial piston hyd. pump (Vickers from Joy PVB-5
1	Hyd. cylinder (joy) 6' x 24"
2	Hyd. Ram (Joy) 4" x 6"
4	External gear hyd. pumps from Electrical Machine Co. 15 GPM
1	External gear hyd. pumps from Elecyrical Machine Co. 30 GPM
1	External gear water pump from Electrical Machine Co. 20 GPM
1	External gear hyd. pump from Electrical Machine Co. 2 section pump 20 GPM each
1	Axial piston hyd. pump from Electrical Machine Co.
2	Hyd. motors, axial piston
1	Hyd. directional control - 6 unit stack
1	Hyd. directional control - 5 unit stack
1	Hyd. directional control - 3 unit stack
1	Hyd. directional control - 2 unit stack
1	Hyd. directional control - 1 unit stack
1	Hyd. pressure reducing valve
3	Hyd. flow volume control valve
1	Hyd. cylinder, 2 way, 1½ x 6"
1	Hyd. cylinder, 2 way, 1½ x 4"
1	Hyd. cylinder, 2 way, 3" x 8"
1	Hyd. cylinder, ram, 2 stage
1	Hyd. cylinder, 2 way cylinder
1	Gear case drive unit for roof drill
1	Universal joint drive for 15 BU loader
1	Universal joint dirve unit

QUANTITY	DESCRIPTION
1	Differential ring gear and differential
2	Shuttle car conveyor chain
1	Roller chain, size 80H, 1 ft. length
1	Roller chain, size about 50, double roller
1	Roller chain for loader conveyor, 4 links
1	Spanner wrench, 10
1	Electrical switch box
4	AC welders (180 amp)
2	AC-DC welders (225 amp)
6	Oxy-acetylene welders
1	Weld tester
2	Grinders
4	Vices
1	Power hack saw
1	Nu-Day Hydraulic Analyzer
1	O.T.C. Hydraulic anaylzer
1	Hydraulic test bench
4	Simpson 260 Multimeter
5	Fluke 8000A Digital Meter
4	516 Tektronix scope
3	Wavetek signal scope
4	Philco Ford Electronic Training Sets
1 lot	Contactors and assorted components

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MAJORITY MEMBERS:
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WILLIAM D. FORD, MICH.
LLOYD MEEDS, WASH.
AUGUSTUS F. HAWKINS, CALIF.
PATSY T. MINK, HAWAII
SHIRLEY CHISHOLM, N.Y.
MARIO BIAGGI, N.Y.
LOUISE DAY HICKS, MASS.
ROMANO L. MAZZOLI, KY.
HERMAN BADILLO, N.Y.
EDITH GREEN, OREG.
225-4361

MINORITY MEMBERS:
ALPHONZO BELL, CALIF.
JOHN M. ASHBROOK, OHIO
EARL B. RUTH, N.C.
EDWIN B. FORSYTHE, N.J.
VICTOR V. VEYSEY, CALIF.
JACK F. KEMP, N.Y.
PETER A. PEYSER, N.Y.

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
COMMITTEE ON EDUCATION AND LABOR
GENERAL SUBCOMMITTEE ON EDUCATION

B-345C RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515

Dr. Coy
Joe Beberich

September 13, 1972

Mr. Herman E. Ashfield
Dean of Instruction
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Dear Mr. Ashfield:

Thank you very much for sending me a copy of your proposal for a pilot program in Coal Mining Technology.

I have sent a letter to Dr. Ronald McCage of the Illinois Vocational Research and Development Unit encouraging his funding of your proposal. And I have also sent a letter to Mr. Rogers Morton, Secretary of the Interior, urging that the Federal Bureau of Mines consider funding your program.

Thank you for keeping me informed and I hope that we will be successful in obtaining funding for your very worthy program. If I can be of further assistance, please feel free to contact me.

With best wishes.

Sincerely,

Roman C. Pucinski
Chairman, General
Subcommittee on Education

RCP:eb

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MAJORITY MEMBERS:
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LOUISE DAY HICKS, MASS.
ROMANO L. MAZZOLI, KY.
HERMAN BADILLO, N.Y.
EDITH GREEN, OREG.
225-4365

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
COMMITTEE ON EDUCATION AND LABOR
GENERAL SUBCOMMITTEE ON EDUCATION
B-346C RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515

MINORITY MEMBERS:
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JOHN M. ASHBROOK, OHIO
EDWIN D. ESCH, N.C.
EDWIN B. FORSYTHE, N.J.
VICTOR V. VEYSEY, CALIF.
JACK F. KEMP, N.Y.
HOWARD W. ROBISON, N.Y.

Dr. Cof
J. Bahnsch

September 13, 1972

Dr. Ronald McCage, Coordinator
Research and Development Unit
Board of Vocational Education and
Rehabilitation
1035 Outer Park Drive
Springfield, Illinois 62706

Dear Dr. McCage:

It has come to my attention that the Wabash Valley College has submitted a proposal to you for a program in Coal Mining Technology.

Since I was among the first people to suggest that the Wabash Valley College offer this course in Coal Mining Technology and since I have reviewed the application submitted to your office, I would like to urge that you give this proposal the most careful consideration possible. I believe that such a course at Wabash Valley College would fill a great need in that area and therefore ought to be worthy of being funded by your division.

Thank you very much for your consideration of this request and I look forward to your response.

With best wishes.

Sincerely,

Roman C. Pucinski
Chairman, General
Subcommittee on Education

RCP:eb

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CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
COMMITTEE ON EDUCATION AND LABOR
GENERAL SUBCOMMITTEE ON EDUCATION
[illegible] HOUSE OFFICE BUILDING
WASHINGTON, D.C. [illegible]

Dr. Coy
Joe Belanich

September 13, 1972

Mr. Rogers Morton, Secretary
U.S. Department of Interior
Washington, D.C.

Dear Mr. Secretary:

I have enclosed for your information a proposal drafted by the Wabash Valley College to fund a Coal Mining Technology course.

I believe that this proposal has a great deal of merit and would fill a great need in that part of the country for such expertise. Therefore, I would urge you and the Federal Bureau of Mines to review all possible sources of funding in order to find Federal funding for this proposal.

Thank you very much for your consideration of this request.

With best wishes.

Sincerely,

Roman C. Pucinski
Chairman, General
Subcommittee on Education

RCP:eb

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GEORGE E. SHIPLEY
20th District, Illinois

HOUSE
RURAL ILLINOIS AREA

ADMINISTRATIVE ASSISTANT
Donald H. Manes

WASHINGTON OFFICE
2161 RAYBURN OFFICE BUILDING
WASHINGTON, D. C. 20515

COMMITTEE ON
APPROPRIATIONS

DISTRICT OFFICES
FEDERAL BUILDING
MARION, ILLINOIS 62959

Congress of the United States
House of Representatives

September 21, 1972

J. Coll
J. Ireland

Norman E. Akilfield
Dean of Instruction
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Dear Mr. Akilfield:

Thank you very much for sending me a copy of the proposal for the pilot project in Coal Mining Technology.

Please be assured I do want to be of assistance with regard to funding for this project, and will be happy to express my interest in the proposal. I hope this will be of some help.

With kind personal regards, I remain

Sincerely yours,

George E. Shipley, M.C.

GES/ge

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United States Senate

September 18, 1972

J. Col
J. Boland

Mr. Harmon E. Whitfield
Dean of Instruction
Wabash Valley College
2200 College Drive
Mt. Carmel, Illinois 62863

Dear Mr. Whitfield:

Thank you for your recent letter. I was pleased to learn of your proposal for a pilot project in Coal Mining Technology. Certainly such a curriculum would be beneficial to the Coal Mine Industry and to those receiving training and possible employment in this area.

As a United States Senator, I feel that it would be improper for me to become involved in matters relating solely to State funding. Such matters are not within my jurisdiction and therefore, I do not wish to interfere.

It is my understanding that the Federal Bureau of Mines currently funds only direct research programs in advanced aspects of mining health and safety.

Possible sources of Federal funding would be the Office of Education and the National Science Foundation.

I wish you every success in this worthwhile endeavor. If I may be of assistance on any Federal matters relating to this project, please contact me.

Sincerely,

Charles H. Percy
United States Senator

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[illegible]

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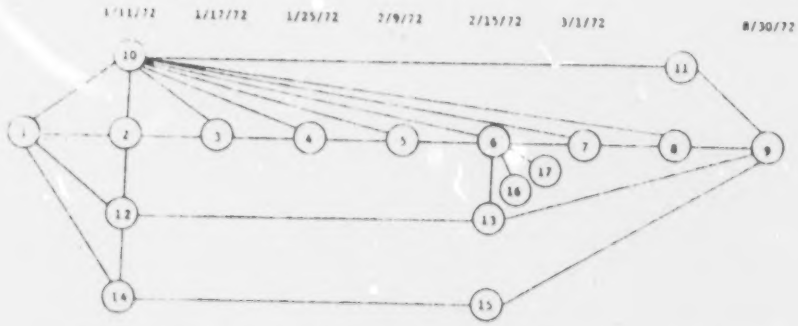

Fig. 1—Stages in developing a curriculum for training coal mine workers.

1. Develop curriculum
2. Wabash Valley College Curriculum Committee
3. Illinois Eastern Junior Colleges VOTEC Committee
4. Illinois Eastern Junior Colleges District Advisory Council
5. Illinois Eastern Junior Colleges Citizen's Advisory Council
6. Illinois Eastern Junior Colleges Board of Trustees
7. Illinois Junior College Board
8. Board of Higher Education
9. Start classes
10. Research existing programs, teaching materials, and equipment needs
11. Secure teaching materials and equipment
12. Research instructional staff needs
13. Hire or train instructional staff
14. Research possible funding
15. Apply for funding
16. Organize permanent Advisory Committee
17. Publicize program

program approved and in operation. The deadline for having programs submitted to the Illinois Junior College Board to begin during the Fall Quarter was March 1, 1972. Since classes start on August 30, at Wabash Valley College, it was necessary to have all phases of program development completed by that date.

After outlining the essential requirements to put the program in operation by August 30, it appeared to be an almost impossible task. It meant that the curriculum had to be developed within a matter of days and that it had to receive approval at the first reading of each committee. The following curriculum was presented to all in-district committees and received a unanimous approval.

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ILLINOIS EASTERN JUNIOR COLLEGES
DISTRICT 529
WABASH VALLEY COLLEGE
PROPOSAL FOR OCCUPATIONAL
PROGRAM IN COAL MINING
TECHNOLOGY 1 YEAR
CERTIFICATE PROGRAM

DATES PRESENTED TO:
Gen'l Vo Tech Adv. 1/17/72
WVC Curriculum 1/11/72
District Adm. Council 1/25/72
Citizen's Adv. 2/9/72
Board of Trustees 2/15/72

		CONTACT HOURS PER WEEK		
		Class	*Laboratory*	*Credit Hours*
First Quarter				
CMT 112	Introduction to Coal Mining	4	0	4
CMT 122	Mining Law	4	0	4
CMS 112	First Aid & Mine Rescue	4	0	4
MTH 112	Applied Mathematics	4	0	4
ORT 111	Freshman Orientation	1	0	1
	TOTAL HOURS FOR FIRST QUARTER	17	0	17
Second Quarter				
CMS 122	Coal Mine Atmosphere	4	0	4
DLR 132	Basic Welding	2	4	4
CMT 132	Lamp & Detection Instruments	4	0	4
CMS 132	Accident Prevention & Safety	4	0	4
	TOTAL HOURS FOR SECOND QUARTER	14	4	16
Third Quarter				
CMT 142	Mining Equipment	4	0	4
CMS 142	Coal Mine Ventilation	4	0	4
CMT 152	Roof & Rib Control	4	0	4
CMT 162	Problems of Operating Underground Mines	4	0	4
	TOTAL HOURS FOR THIRD QUARTER	16	0	16
	TOTAL HOURS FOR PROGRAM	47	4	49

COAL MINING TECHNOLOGY COURSE DESCRIPTIONS

CMT 112 INTRODUCTION TO COAL MINING 4-0-4

An introduction to the fundamental concepts of coal mining. Geological factors affecting coal from the origin of the earth. How coal was formed and coal resources of the United States. The choices and methods of mining coal. Four classroom hours per week. 4 quarter hours credit.

CMT 122 MINING LAW 4-0-4

An introduction to the coal mining laws of the federal government and state government. This course deals with regulations relating to mining practices. The Mining Act of Illinois covering the installation, operation and safety in bituminous coal mining and also the Federal Mine Safety Code. Four classroom hours per week. 4 quarter hours credit.

CMS 112 FIRST-AID & MINE RESCUE 4-0-4

Training by instruction and demonstration, information is disseminated regarding safe and unsafe practices with a view to reducing accidents as well

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as teaching the correct emergency aid for injured persons. The additional purpose of this course is to familiarize the student with the principles of mine rescue operations and the actions to be taken by men underground in case of a mine disaster. Four classroom hours per week. 4 quarter hours credit.

MTH 112 APPLIED MATHEMATICS 4-0-4

This course is designed primarily for the vocational-technical student. The course material emphasizes the fundamental operations with whole numbers, fractions and decimals, and studies the applications of those operations to areas related to specific vocational programs. PREQUISITE: MTH 010 or its equivalent. Four classroom hours per week. 4 quarter hours credit.

ORT 111 FRESHMAN ORIENTATION 1-0-1

Designed to give incoming freshmen an introduction to college life. One classroom hour per week. 1 quarter hour credit.

CMS 122 COAL MINE ATMOSPHERE 4-0-4

A study or analysis of mine air. Mine air as it relates to health and safety of the men. The gases commonly encountered in coal mines and the properties of them. The fundamental physical laws pertaining to air and atmospheric pressure. The effect of temperature and pressure on gases within a mine. Four classroom hours per week. 4 quarter hours credit.

DLR 132 BASIC WELDING 2-4-4

This is a practical course in the use of oxy-acetylene and electric arc welding equipment. Students will practice cutting, bronze welding, fusion welding, and hard-facing with the oxy-acetylene flame. They will also practice selection of electrodes, running bends, and welding common joints in all positions. Familiarization with semi-automatic inert gas processes will be provded. Two classroom hours per week. Four lab hours per week. 4 quarter hours credit.

CMT 132 LAMP & DETECTION INSTRUMENTS 4-0-4

The purpose of this course is to instruct in the proper use and care of the permissible flame safety lamp and the various permissible methane detectors. The ability to determine methane concentrations using these instruments and the ability to properly maintain them. To train persons to test mine atmospheres with the various instruments and gauges. Four classroom hours per week. 4 quarter hours credit.

CMS 132 ACCIDENT PREVENTION & SAFETY 4-0-4

Because the injury and fatality rates of coal mines are consistently worse than those of most other industries the need for safety education is prerequisite to safety in coal mines. Of all causes of accidents, the most numerous and baffling are those due to human behavior and personality. Four classroom hours per week. 4 quarter hours credit.

CMT 142 MINING EQUIPMENT 4-0-4

Practices and devices involved in the extraction and transportation of coal. The study of equipment used in drainage and roof support. The use of electricity, hydraulic and compressed air power in coal mines. Coal preparation equipment and machinery. Timbering and pinning equipment. Four classroom hours per week. 4 quarter hours credit.

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CMT 1E. Coal Mine Ventilation 1 0 1

The goal of the course is to help the student understand mine ventilation control devices from the main fan to the working face. Four classroom hours per week. 4 quarter hours credit.

CMT 1F. Roof and Rib Control. 1 0 1

The purpose of this course is to develop a total awareness in the detection of falls of roof, face and rib by related mining personnel and to acquaint them with methods for preventing injuries and fatalities resulting from such danger. Four classroom hours per week. 4 quarter hours credit.

CMT 1G. Problems of Operation, Underground Mines 1 0 1

A total picture of the problem of management in the operating of a coal mine. Union, management relations, grievances and contract disputes. Also the responsibilities and duties of management. Four classroom hours per week. 4 quarter hours credit.

ADVISORY COUNCIL

All of the developmental steps having been completed, at least to the necessary degree, a beginning class of 20 students started August 30, 1972. The permanent Advisory Council consisting of:

Mr. Ray Farrar, Geologist
Mr. Charles R. Harrison, AMAX Coal Company
Mr. M. E. Hopkins, Illinois Mining Institute
Mr. Harold Odle, Department of Mines and Minerals
Mrs. Louise Williams, Mt. Carmel Chamber of Commerce
Mr. John R. Sutton, Southern Illinois University
Mr. Roger Schedes, Inland Steel Company
Mr. Elkins Payne, AMAX Coal Company
Mr. Ted Plumlee, Department of Mines and Minerals
Mr. Sam Beard, Keensburg Mine
Mr. Clem Davidge, U.S. Department of the Interior, Bureau of Mines
Mayor Joe McGuire, Mt. Carmel, Illinois
Mr. C. Dayton McMasken, Department of Mines and Minerals
Mr. Kenneth Wells, United Mine Workers of America

(*Ex Officio Members*)
Dr. John Cox, President, Wabash Valley College
Mr. Herman Ahlfield, Dean of Instruction, Wabash Valley College
Mr. Joe Berkovich, Instructor, Wabash Valley College
Mr. Stanley Greathine, Instructor, Wabash Valley College
Mr. Garry Shankard, Instructor, Wabash Valley College
Mr. Bob Adams, Instructor, Wabash Valley College

held its first meeting on September 27, 1972. The Advisory Committee recommended that we consider expanding this nine-mem-

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pilot project into a two-year Associate in Applied Science Degree program for the training of mine maintenance personnel and mine electricians. They expressed a desire that a profit attitude be stressed to the students since it is essential to the operation of any successful business.

Thank you very much for your interest in Wabash Valley College, the Coal Mining Technology Program, and for having me on your program.

Bob Grimm: Thank you, Dean Ahlfeld, for an interesting report on your program at Wabash Valley. Our next paper is coauthored by Dr. Samuel R. Jewell and Mr. Ronnie J. Haynes. Both of these men are associated with the Cooperative Wildlife Research Laboratory at Southern Illinois University in Carbondale. Dr. Jewell is Assistant Director of this wildlife program and Mr. Haynes is presently a Graduate Research Assistant. I noted from his pedigree that he, too, hopes to have his Doctorate completed in the summer of 1974. Without further ado, I give you, Dr. Samuel Jewell.

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WABASH VALLEY COLLEGE

COAL MINING TECHNOLOGY
Class List 1972-1973

Name	Address (Present)	(Permanent)
Armstrong, Gabe	107 Evergreen Lane Mt. Carmel, Illinois	Same
Arnold, Larry	Route 1 Mt. Carmel, Illinois	Same
Carrie, Bryan	R. R. 3 Mt. Carmel, Illinois	Same
Crooks, David	Route 1 Grayville, Illinois	Same
Gresti, James	112 Fremen Drive Mt. Carmel, Illinois	Same
Harvey, Steve	R. R. 3 Albion, Illinois	Same
Hastings, Warren	Box 111 Belmont, Illinois	R. R. 2 Louisville, Illinois
Harrell, Larry	Box 403 Mt. Carmel, Illinois	Same
James, Frank	R. R. 6 Mt. Carmel, Illinois	Same
Kidd, James	514 Walnut Street Mt. Carmel, Illinois	Route 1 Mechanicsburg, Illinois
Minter, Jack	1211 Walnut Street Mt. Carmel, Illinois	Same
Newkirk, Steve	1207 Mulberry Street Mt. Carmel, Illinois	Same
Patterson, Myles S.	224 W. 2nd Street Mt. Carmel, Illinois	Same
Reece, James D.	415 E. 9th Street Mt. Carmel, Illinois	Same
Smith, Carl	Box 23 Mt. Carmel, Illinois	Same

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Spitzner, James	Route 2 Mt. Carmel, Illinois	Same
Stanislawski, Robert	R. R. 3 Mt. Carmel, Illinois	Same
Sanders, Greg	1028 Landes Mt. Carmel, Illinois	Same

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2. Eveland, C.C. and Cavan, C.A. Mine Gases and Methods for Detecting Them. U.S. Bituminous Coal Mining Office [1975]. 82 pp.

3. Eveland, C.C. and Cavan, C.A. Procedure in Sealing and Reopening Mine Fires and in Recovery Operations Following Mine Explosions. U.S. Bituminous Coal Mining Office, 1948. 66 pp.

4. Eveland, C.C. Construction, Care, and Use of Underwater Pipes Before Sealing. U.S. Bituminous Coal Mining Office [1947]. 28 pp.

5. Jones, Ernest C. & Eveland, Joseph W. Coal Mining Areas in Pennsylvania Anthracite Geological Survey. Pennsylvania Power Exchange [1976]. [1977]. 371 pp.

6. Jones, Joseph C. & Eveland, Joseph W. Coal Mining Map. [ ] Pennsylvania Anthracite Geological Survey. Pennsylvania Power Exchange [1975]. 210 pp.

7. Kinney, Roger [n.d.]. The Mine Foreman's Guide. The American Foundation Power Service Corporation. Baltimore, Ohio [1977]. 72 pp.

8. Martin, John C. Mines and U.S. Dept. of the Interior, Bureau of Mines [1975]. 170 pp.

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11. Stewart, Robert D.C. Power and the Environmental protection Crisis in Energy Supply [1975]. 90 pp.

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13. Spencer, Chad C.C. Availability from Facts of Coal and Coal in Underground Coal Mines. U.S. Bituminous Mining Office [1975]. 250 pp.